ADMINISTRATION REPORTS

OF THE

FOREST DEPARTMENT

IN THE

BOMBAY PRESIDENCY,

INCLUDING

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SIND,

FOR THE YEAR 1888-89.

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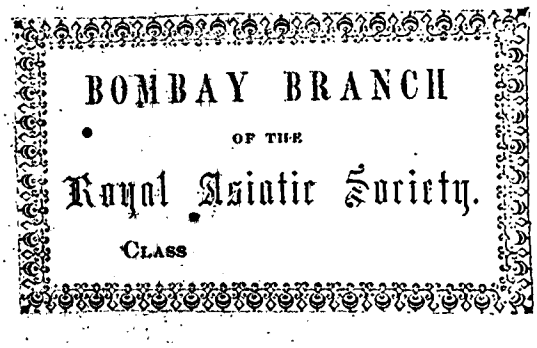

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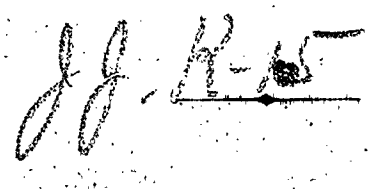

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PRINTED AT THE GOVERNMENT CENTRAL PRESS.

1890.

NORTHERN CIRCLE.

No. 3696 of 1889-90.

From

A. T. SHUTTLEWORTH, Esquire,

Conservator of Forests, Northern Circle;

To

JOHN NUGENT, Esquire,

Chief Secretary to Government,

Revenue Department,

Bombay.

Poona, 31st October 1889.

Sir,

I have the honour to submit herewith the Forest Administration Report of the Northern Circle for the year 1888-89, with its subsidiary statements.

I have the honour to be,

Sir,

Your most obedient Servant,

A. T. SHUTTLEWORTH,

Conservator of Forests, Northern Circle.

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FOREST ADMINISTRATION REPORT

OF THE

NORTHERN CIRCLE, BOMBAY PRESIDENCY,

FOR THE OFFICIAL YEAR 1888-89.

INTRODUCTION.

The official year 1888-89 may be considered in the history of the administration of the Forest Department of the Northern Circle to be a prosperous year, for satisfactory progress can be recorded in every branch of forest conservancy and works, and evidence has not been wanting to show what good service well preserved forests are capable of rendering to mankind.

2. The conviction that the forests of Western India should be regarded mainly from the standpoint of their utility in augmenting the general prosperity of the country, is steadily gaining ground, and is receiving wider acceptance, as the beneficial change that has come over the mountain and hill ranges under forest protection, in the Deccan especially, becomes more frequently commented upon by district officers and other travellers, who realise the improved climatic conditions, who see the water-supply of the country naturally increasing, who observe that fodder and grazing are provided for cattle inside the forests at times of drought and scarcity when no grazing and little fodder is obtainable outside forest preserves, who notice that labour, employment, livelihood, trade, follow in the train of successful forest conservation, that old industries flourish and new industries are created, that animal life is promoted, inasmuch as birds and beasts increase and multiply, who mark that agriculture receives renewed vigour and thrives where it was drooping before, who realise that the rivers whose sources are preserved in afforested mountainous lands maintain constant water even in the dry months and are not subjected to disastrous floods in the season of rain, and who recognize that the soil is bound to the drainage slopes by the forest growth and is not carried away bodily from the mountain sides to be deposited in, and thereby to choke up, river-beds, water-channels, artificial reservoirs, tidal creeks and harbours, that no detritus comes down from the wooded hill-sides to bury crops on the fields below and to convert productiveness into waste.

3. A net increase of 298 square miles and 569 acres has accrued at the close of the year upon the acreage which represented the extent of forest reservations at the commencement of the year. The reserved forests have expanded by 317 square miles and 619 acres, while on the other hand the protected forests have suffered reduction by 19 square miles and 50 acres owing to conversions, either into reserved forest, or into crop-lands.

4. Forest and waste lands have been prospected in different directions with the view of constituting additional reserved and protected forests, and some selected lands have been provisionally notified during the year in order to undergo inquiry into the existence, nature and extent of rights which may be attaching to them.

5. Forest settlement proceedings have been prosecuted with vigour in six divisions, and very few of the "old forests" remain now to be settled.

6. 2,265 miles of forest boundaries have been defined upon the ground by outward and visible signs of forest reservation in the shape of 8,556 large-sized special forest-boundary marks, and 25,402 smaller ones; the expenditure upon demarcation having amounted to Rs. 11,948.

7. Privileges of appropriation and enjoyment have been exercised freely by forest villagers generally in the forests of all districts. Free grazing, the free collection and removal of dead fallen firewood, and the appropriation of minor forest produce, constitute the chief of these concessions.

8. The application of Working Plans has been extended to the forests of the Thána district, wherein 1,143 square miles of forests had been differentiated into blocks and compartments up to the close of the year; and 156 compartments had been transformed into "coupes" for the exploitation of timber, and were worked during the year.

9. Forest surveys upon a normal scale of 4 inches equal to 1 mile, but with the larger scale of 8 inches to the mile for exceptionally valuable forests, were carried on by the Forest Survey Department in the Násik, Thána, Poona and Sátára districts; and much useful work has been accomplished.

10. The institution of a special Forest Survey Branch for the forests of this Presidency is *the* historical event of the year. This Survey Branch consists of a survey party belonging to the Topographical Survey Department of the Government of India.

11. No changes have taken place in the constitution and numerical strength of the Controlling and subordinate establishments.

12. Protection against forest crimes, other than setting fire to forests, has been generally successful. 1,027 cases were prosecuted, convictions obtaining in 776 of them; and 6,154 detected forest offences were compounded under Section 67 of the Forest Act. 1,99,426 head of cattle of different kinds caught trespassing in plantations and closed forests were impounded under Chapter XI of the Forest Act.

13. Fire-conservancy has not been so satisfactory as could be desired. The year was a comparatively dry year, and owing to the scarcity of fodder closed forests were opened to grazing in several divisions, and thus more elements for the occurrence and prevalence of fires were present. More than one-fifth of the total forest area of the Northern Circle was traversed by fires.

14. It has not been a good year for cultural operations, for the rainfall was delayed, fickle and scanty. However, natural reproduction has not made unsatisfactory progress all over the country. Wherever protection, which is the life of forestry, has been good, there reboisement and regeneration have produced marked effect, and the augmentation of the capital value of the forests promises increased revenues in the future.

15. Communications, which render forest produce accessible to markets, have been improved and extended in all divisions by the Public Works Department, during the year, at the cost of the Provincial Services Budget, towards which the Forest Department contributes a considerable sum annually; and surveys and estimates of cost have been made of newly projected lines for timber and other traffic.

16. Buildings to serve as the offices of Range Forest Officers have been constructed also by the Public Works Department in connection with some táluka kacheris in districts where such accommodation was wanting. And forest-posts and stations for forest round and beat-guards to live in, occupying central sites within the areas entrusted to their protective care, have been built in different directions by Divisional Forest Officers at the cost of the Forest Budget.

17. Free grants of timber have been made, in all the districts save Sholápur, by the Revenue Officers, to destitute and other cultivators, who have suffered loss by fire, or have not possessed the means to re-build and repair their houses.

18. An increased quantity of timber and other forest produce has been exploited from the forests in all the divisions; a larger proportion of the forests having been brought under working operations, and a larger acreage-yield having been obtained in many cases.

19. The forest revenue of the year is the largest on record. It has increased in the last ten years from Rs. 4,48,850 in 1878-79 to Rs. 11,60,769 in 1888-89, and is by Rs. 1,23,472 greater than of the best year of the past decade

The demand for timber has been good, and fair prices have ruled the market. From grass and grazing enhanced receipts, exceeding those of the previous year by over Rs. 77,000, have been credited: this is due in great measure to closed forest areas having been opened to cattle upon payment of fees in the Deccan and Khándesh districts owing to a scarcity of fodder. The year has been of financial prosperity.

20. The following statement shows the names of the superior Forest Officers who have been conducting the administration of the forests during the year and the stations they have occupied, with other particulars.

NORTHERN CIRCLE.

Mr. A. T. Shuttleworth, Conservator of Forests, 1st Grade, throughout the year.

No.	Forest Division.	Name of Officer.	Rank.	Designation.	From	To	Remarks.
1	2	3	4	5	6	7	8
		Mr. A. D. Wilkins ...	Deputy Conservator of Forests, 4th Grade.	Divisional Forest Officer.	1st April 1888 ...	31st March 1889.	
		,, J. H. Clabby ...	Acting Sub-Assistant Conservator of Forests, 3rd Grade.	Assistant ...	Do. ...	Do.	
1	North Thána ...	,, A. R. Maidment.	Sub-Assistant do.	Do. ...	Do. ...	7th May 1888.	
		,, J. Baptista ...	Acting do. do.	Do. ...	8th May 1888 ...	22nd Sept. 1888.	
		,, A. R. Maidment.	Sub-Assistant do.	Do. ...	23rd Sept. 1888 ...	4th Dec. 1888.	
		,, J. Baptista ...	Acting do. do.	Do. ...	5th Dec. 1888 ...	22nd do.	
		,, A. R. Maidment.	Sub-Assistant do.	Do. ...	23rd do. ...	31st March 1889.	
		Mr. G. P. Millett ...	Assistant Conservator of Forests, 1st Grade.	Divisional Forest Officer.	1st April 1888 ...	Do.	
		,, R. H. Madan ...	Acting do. 3rd Grade	Assistant ...	Do. ...	7th July 1888.	
2	South Thána ...	,, G. S. Hinge ...	Acting Sub-Assistant Conservator of Forests, 3rd Grade.	Do. ...	8th July 1888 ...	10th October 1888	
		,, R. H. Madan ...	Acting Assistant do.	Do. ...	12th October 1888	31st March 1889.	
		,, N. B. Oke ...	Sub-Assistant do. 1st Grade.	Do. ...	1st April 1888 ...	4th Dec. 1888 ...	Retired on pension.
		Mr. W. G. Clabby ...	Acting Assistant Conservator of Forests, 3rd Grade.	Divisional Forest Officer.	Do. ...	4th April 1888.	
		,, R. S. F. Fagan ...	Deputy Conservator of Forests, 4th Grade.	Do. ...	5th April 1888 ...	7th August 1888.	
3	East Khándesh.	,, W. G. Clabby ...	Acting Assistant Conservator of Forests, 3rd Grade.	Do. ...	8th August 1888.	6th October 1888	
		,, F. R. Desai ...	Deputy Conservator of Forests, 1st Grade.	Do. ...	7th October 1888	31st March 1889.	
		Mr. R. S. F. Fagan ...	Do. 4th Grade	Do. ..	1st April 1888 ...	Do.	
		,, G. S. Hinge ...	Acting Sub-Assistant Conservator of Forests, 3rd Grade.	Assistant ...	Do. ...	11th June 1888.	
4	West Khándesh.	,, G. K. Shahane ...	Sub-Assistant Conservator of Forests, 2nd Grade.	Do. ...	12th June 1888 ...	2nd Nov. 1888 ...	Under suspension up to 31st March 1889, and since dismissed.
		,, G. S. Hinge ...	Acting do. 3rd Grade	Do. ...	22nd Jan. 1889 ...	31st March 1889.	
		Mr. W. G. Betham ...	Deputy Conservator of Forests, 2nd Grade.	Divisional Forest Officer.	1st April 1888 ..	4th April 1888.	
		,, W. G. Clabby ...	Acting Assistant Conservator of Forests, 3rd Grade.	Do. ...	5th do. ...	10th July 1888.	
5	Násik	,, W. G. Betham ..	Deputy Conservator of Forests, 2nd Grade.	Do. ...	11th July 1888 ...	31st March 1889.	
		,, W. A. Wallinger.	Sub-Assistant Conservator of Forests, 3rd Grade.	Assistant ...	1st April 1888 ...	Do.	
		Mr. H. Mainwaring...	Deputy Conservator of Forests, 3rd Grade.	Divisional Forest Officer.	Do. ...	2nd May 1888.	
		,, S. Hornidge ...	Assistant Conservator of Forests, 1st Grade.	Do. ...	3rd May 1888 ...	11th July 1888.	
6	Ahmednagar ...	,, W. G. Clabby ...	Acting Assistant Conservator of Forests, 3rd Grade.	Do. ...	12th July 1888 ...	1st August 1888.	
		,, H. Mainwaring...	Deputy Conservator of Forests, 3rd Grade.	Do. ...	2nd August 1888	31st March 1889.	
7	Poona	Mr. R. C. Wroughton	Do. 2nd Grade.	Do. ...	1st April 1888 ..	Do.	
		,, W. R. Gaunde ...	Sub-Assistant Conservator of Forests, 2nd Grade.	Assistant ...	Do. ...	Do.	
8	Sátára	Mr. C. Greatheed ...	Deputy Conservator of Forests, 3rd Grade.	Divisional Forest Officer.	Do. ...	Do.	
		,, L. D. Joshi ..	Sub-Assistant Conservator of Forests, 1st Grade.	Assistant ...	Do. ...	Do.	
9	Sholápur ...	Mr. S. Hornidge ...	Assistant do.	Divisional Forest Officer.	Do. ...	26th March 1889.	
		,, H. Mainwaring...	Deputy Conservator of Forests, 3rd Grade.	Do. ...	27th March 1889 .	31st do.	
10	Surat	Mr. F. Gleadow ...	Do. 4th Grade.	Do. ...	1st April 1888 ...	14th April 1888.	
		,, W. S. Hexton ...	Do. 1st Grade.	Do. ...	15th do. ...	31st March 1889.	
11	Panch Mahals .	Mr. H. W. Keys ...	Assistant Conservator of Forests, 1st Grade.	Do. ...	1st do. ...	9th July 1888.	
		,, R. H. Madan ...	Acting do. 3rd Grade	Do. ...	10th July 1888 ...	9th October 1888	
		,, H. W. Keys ...	Assistant do. 1st Grade,	Do. ...	10th October 1888	31st March 1889.	
12	Working Plans.	Mr. T. B. Fry ...	Deputy Conservator of Forests, 3rd Grade.	Do. ...	1st April 1888 ..	6th August 1888.	
		,, R. C. Wroughton	Do. 2nd Grade.	Do. ...	7th August 1888.	5th Nov. 1888.	
		,, T. B. Fry ..	Do. 3rd Grade	Do. ..	6th Nov. 1888 ...	31st March 1889.	

CHAPTER I.

AREA AND BOUNDARIES.

1.—AREA.

21. The selection of forest-lands or waste-lands for forest reservations was carried on systematically during the year in the divisions of North and South Thána, East and West Khándesh and Ahmednagar, by officers specially appointed for the purpose; while in other divisions Assistant or Deputy Collectors performed this work, where it was required to be undertaken, in addition to their own Revenue and Magisterial duties.

22. The following statement shows the respective areas added to, and excluded from, the forest areas existing at the commencement of the year in the several divisions; and also the acreage remaining in forest reservations duly constituted under the Indian Forest Act at the end of the year :—

No.	Division.	Area on 1st April 1888.				Added during the year.				Disforested during the year.				Area on 31st March 1889.			
		Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.	
		Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.
1	North Thána	284	536	298	369	15	122	..	..	..	2	2	529	300	16	295	480
2	South Thána	325	395	352	388	1	267	..	..	..	1	..	4	327	21	352	384
3	East Khándesh	724	472	68	161	75	108	..	..	..	100	15	..	799	480	53	161
4	West Khándesh ..	1,237	634	195	151	..	302	..	..	..	..	..	..	1,238	296	195	151
5	Násik	1,107	315	..	..	170	480	..	..	..	247	..	..	1,277	548	..	..
6	Ahmednagar	822	540	11	114	36	357	..	..	..	286	..	..	858	611	11	114
7	Poona	727	503	..	..	13	185	..	..	..	540	..	..	740	148	..	..
8	Sátára	664	366	..	17	5	456	..	11	4	181	..	..	666	1	..	28
9	Sholápur	270	547	..	..	1	557	..	..	..	18	..	..	272	446	..	..
10	Surat	69	124	..	..	..	..	..	..	..	..	..	..	69	124	..	..
11	Dángs	678	320	..	..	..	..	..	..	..	..	..	..	678	320	..	..
12	Kaira	..	39	..	..	..	..	..	..	..	..	..	..	..	39	..	..
13	Panch Maháls	179	377	140	253	7	273	1	142	3	473	2	310	183	177	139	85
14	Ahmedabad	34	118	..	..	..	..	..	..	..	..	..	..	34	118	..	..
	Total ..	7,128	166	1,066	173	327	547	1	153	9	568	20	203	7,446	145	1,047	123

23. The year commenced with 8,194 square miles and 339 acres, made up of 7,128 square miles and 166 acres of reserved, and 1,066 square miles and 173 acres of protected, forests under forest conservancy. 327 square miles and 547 acres of reserved forests appear as added during the year; but 82 square miles and 536 acres of this quantity do not represent expansion of forest reservation, but only an increase on paper, owing to a rectification of figures made in the forest lists of the Násik Division, careful examination of the Revenue Survey Records having shown that the sum total of the acreage of all the survey numbers which comprise the reserved forests in that division is greater by 82 square miles and 536 acres than had been previously recorded by the Forest Settlement Officer. The actual expansions of the reserved forests perfected by notifications published during the year under Section 19 of the Forest Act aggregate 245 square miles and 11 acres. And the net increase in the reserved forest acreage on the forest registers after deduction has been made of the disforestations, amounting to 9 square miles and 568 acres, which have been effected from time to time under Section 26 of the said Act, is shown as 317 square miles, 619 acres, while the actual expansion of the reserved forest areas is only 235 square miles and 83 acres.

24. One square mile and 153 acres have been added to the protected forests, and 20 square miles and 203 acres have been removed from protected forests during the year; and by these changes a decrease of 19 square miles and 50 acres in the area of protected forests has been produced, but the greater portion of the removed has been transformed into "Reserved Forests."

25. The total area maintained in forest conservancy at the close of the year under Chapters II. and IV. of the Forest Act is 8,493 square miles and 268

acres, consisting of 7,446 square miles and 145 acres of reserved, and 1,047 square miles and 123 acres of protected forests. These figures indicate the sum total of the increase of the territorial area of forest conservancy to be 298 square miles and 569 acres, but, as explained above, 82 square miles and 536 acres do not represent actual expansions of reservations, and are added by rectification of incorrect entries in the forest registers.

26. It must at the same time be noted that 34 square miles and 118 acres of the reserved forests in the Modása Petha of the Ahmedabad Collectorate, included in the above statement, have not yet been placed under the management of the Forest Department, but continue in charge of the Collector of the District, as was the case during the preceding year; and also that the 39 acres of reserved forests shown against Kaira, which were removed from the charge of the Forest Department under the orders of Government Resolution No. 4332, dated 29th May 1884, in the Revenue Department, not having been disforested by notification under Section 26 of the Forest Act up to date, are still entered in the statement as forest, although their management is under the Land Revenue Department, who dispose of the grass upon these lands by public auction sales.

27. The following statement shows how far the work of forest demarcation, meaning the selection and constitution under the Indian Forest Act VII of 1878 of lands for forest reservation, had progressed up to the close of the year; and the proportions that the reserved forests bear to the territorial areas of different Collectorates in the Northern Circle. "Protected Forests" are not taken into account as they are not considered to be permanent reservations:—

No.	Collectorates.	Territorial area in Square Miles.	Reserved Forests duly constituted in Square Miles.	Percentage of Forests.	Number of Tálukás or Revenue Sub-Divisions.	Number of Tálukás in which Demarcation has been undertaken and sanctioned.	Number of Tálukás in which Demarcation remains to be completed.	Number of undemarcated Tálukás.
1	Thána	3,936	627	15·9	10	6	1	3
2	Khándesh	9,944	2,038	20·4	16	10	4	2
3	Násik	5,940	1,278	21·5	12	11	1	...
4	Ahmednagar ...	6,666	859	12·8	11	11	...	...
5	Poona	5,348	740	13·8	8	8	...	...
6	Sátára	4,988	666	13·3	11	11	...	...
7	Sholápur	4,521	273	6·0	7	7	...	...
8	Surat*	1,662	70	4·2	8	1	3	4
9	Panch Maháls ...	1,613	183	11·3	3	3	...	...
10	Ahmedabad ...	3,821	34	0·88	7	1	...	6
	Total ...	48,439	6,768	13·9	93	69	9	15

*The Dángs are not included.

28. It will be seen from the statement that in the Collectorates of Ahmednagar, Poona, Sátára, Sholápur and Panch Maháls no demarcation work remains to be done. But the work of acquiring tracts of occupied lands which are included in the sanctioned demarcation schemes of the several tálukás of these Collectorates, as well as of the others, was going on during the year, and a sum, Rs. 32,013, was expended in payment of the compensation for the obtainment of 2,031 acres of such lands.

29. In addition to the duly constituted reserved and protected forests considerable areas of forest-lands and of waste-lands which have been selected for forest reservation and in this view have been provisionally notified under Sections 4 and 28 of the Forest Act, were still undergoing inquiries at the close of the year. The following statement gives the distribution of such unsettled forest-lands in the different Collectorates of the Northern Circle:—

No.	Collectorates.	Reserved Forests under Section 4.		Protected Forests under Section 28.		Total.	
		S. Miles.	Acres.	S. Miles.	Acres.	S. Miles.	Acres.
1	Thána	75	626	...	...	75	626
2	Khándesh	198	463	260	493	459	316
3	Násik	...	326	...	...	...	326
4	Ahmednagar	5	559	...	...	5	559
5	Poona	3	214	...	...	3	214
6	Sátára	8	394	...	...	8	394
7	Sholápur	...	...	...	...	...	...
8	Surat	...	...	...	...	...	...
9	Panch Mahals	14	30	...	...	14	30
	Total ...	307	52	260	493	567	545

30. Mr. W. S. Owen, Assistant Superintendent, Revenue Survey, continued to be Forest Settlement Officer throughout the year in the Thána Collectorate. And from the commencement of the year up to the end of May 1888 this officer was engaged in the Wáda Táluka on field demarcation, inspecting and revising, where required, the location and the boundaries of the proposed reserved forests which had been provisionally selected by Mr. Wilkins, the Divisional Forest Officer. In some cases an altogether new line was adopted, while in many cases Mr. Wilkins' boundary, which, generally speaking, corresponds with the revenue survey boundary, was fixed. Mr. Owen then moved into the Bhiwndi Táluka, where negotiations were carried on with survey occupants for the surrender of some lands required for inclusion in reserved forests: this work lasted up to the middle of June. During the rainy season at Thána a variety of work was accomplished by the Forest Settlement Officer, including enquires into rights over teak and other reserved trees upon occupied lands in four tálukás. After the rains and up to the close of the year under report, the demarcation of reserved forests in the Máhím Táluka occupied all Mr. Owen's time and attention.

31. Government Resolution No. 5177, dated 1st August 1888, was passed on the supplementary report on the demarcation and settlement of the Bassein Táluka, and the notifications, as per margin, were published under Section 19 as regards the lands in the tálukás of Bassein, Bhiwndi and Kalyán, and Petha Mokháda; and a provisional notification, under Section 4 of the Forest Act, was published in the *Government Gazette* of the 28th March 1889, in respect of forest-lands and waste-lands to be constituted reserved forests in the Sháhápur Táluka. The greater portion of these forest-lands are protected forests, which were gazetted under Section 34 in March 1879. Rs. 4,649-2-0 were expended in payment of compensation for acquiring 212 acres and 37 gunthás of lands for forest purposes by the Forest Settlement Officer, and Rs. 18,053-6-8 by the Special Officer, Tánsa Water Works, for acquiring 1,078 acres and 29 gunthás of occupied lands for forest reservation.

Bassein.
Government Notification No. 5177 B., dated 1st August 1888.

Mokháda.
Government Notification No. 5915, dated 3rd September 1888.

Bhiwndi.
Government Notification No. 6457 A., dated 25th September 1888.
Government Notification No. 7214, dated 29th October 1888.

Kalyán.
Government Notification No. 7732 A., dated 19th November 1888.

32. Mr. C. G. Dodgson, C. S., was in charge of the Forest Settlement Office Khándesh, throughout the year, and from the commencement of the year up to the rains was engaged in demarcating Bhil settlements inside the Taloda Plain Reserved Forests, and in laying down the boundaries of the Western Taloda Plain Reserves, in the Navápur Petha in revising the boundaries of the two old reserves in the north, known as the Nesu and South Tápti Reserves. A report on the demarcation of these forests was submitted to Government, who, in their Resolution No. 7451, dated 9th November 1888, have sanctioned the proposed schemes with slight modifications. The revised proposals of the Chálisgaon

Táluka were approved and sanctioned by Government, with certain modifications, in their Resolution No. 641, dated 24th January 1889, in the Revenue Department. The inquiry into forest rights of 2 out of 14 Inám villages remaining to be dealt with, was also completed on 31st July 1888. Mr. Dodgson proceeded on three months' privilege leave, handing over charge to Mr. Fraser, C. S. On his return from leave Mr. Dodgson was engaged in the Páchora Táluka in making local inquiries concerning the existence of rights over land intended to be included in reserved forests which had been notified under Section 4 of the Act under sanction of Government Resolution No. 2478, dated 24th April 1888, in the Revenue Department, and also in making inquiries into the existence of rights over certain lands hitherto occupied but recently notified under Section 4 of the Forest Act, in the Sávda Táluka: he then returned to the Dhulia Táluka and continued the inspection and selection of old protected forests for conversion into reserved forests; and on completing this work he proceeded to the Shirpur Táluka and demarcated the boundaries of Bhil settlements, and from thence passed on to the Akráni Parganá, inspecting the boundaries of the Akráni Toranmál Reserve and the Bhil settlements situated inside the reserve; this work was still unfinished at the close of the year. Rs. 5,999-8-0, sanctioned in Government Resolution No. 8680, dated 28th December 1888, were expended in purchasing 842 $\frac{31}{40}$ acres of occupied lands in the Bhusával Táluka. Thus it will be seen that considerable progress was made and excellent work performed by Mr. Dodgson during the year; and Forest conservancy in the Khándesh Collectorate, in so far as reservation of lands for forest preservation is concerned, is established upon a substantial foundation.

33. There has been no special Forest Settlement Officer for the Násik Collectorate as demarcations were nearly completed last year. The forest area has undergone but little change, except in the Peint and Igatpuri Tálukás, where some forest tracts were added to the reserved forests to give solidity and compactness to previous selections. The demarcation of Peint was sanctioned last year, but it has been recorded that stretches of well timbered forest lands have not been included in the selected reserved forests where their inclusion would solidify and connect forest blocks naturally continuous but now detached. The demarcation of the Igatpuri Táluka was sanctioned in Government Resolution No. 3770, dated 11th June 1888, Revenue Department. The only táluka in which any considerable additions to reserves may yet be made is Dindori, where the final notifications under Section 19 of the Act remain still to be issued. Minor additions were made to Násik, Dindori, Chándvad, Báglán and Kalvan Tálukás, and some slight exclusions from the forest areas in the Igatpuri, Yeola and Báglán Tálukás.

34. Mr. Woodburn, C. S., was in special charge of the Forest Settlement Office, Ahmednagar, from 1st April to 30th June 1889, Mr. C. B. Winchester, C. S., in charge from 1st July to 5th September, and Mr. V. B. Vádeker, Deputy Collector, from 6th September till the close of the year; the two latter officers conducted the office, in addition to their own Revenue and Magisterial duties. 759 acres and 33 gunthás of occupied lands which are included in sanctioned demarcation schemes were purchased during the year at an expenditure of Rs. 2,606-12-10. Inquiry for the determination and settlement of lands already notified under Section 4 was also carried on, and some of the lands have been finally notified under Section 19. Government, in their Resolution No. 4661, dated 13th July 1888, in the Revenue Department, approved and sanctioned certain changes in the demarcation of eight villages in the Sangamner Táluka. These changes provide for:—

(*a*) the disforestation of 286 acres and 39 gunthás,

(*b*) the exclusion, from the demarcation, of 21 acres and 3 gunthás of waste lands,

(*c*) the acquirement of 747 acres and 25$\frac{3}{4}$ gunthás of occupied lands,

and in their Resolution No. 2483, dated 30th March 1889, in the Revenue Department, Government sanctioned the modifications proposed by Mr. Woodburn of the original demarcation of the Akola Táluka.

35. There was no special Demarcation and Settlement Officer in the Poona Collectorate; therefore such demarcation and settlement work as remains to be completed has been carried on at different times by one of the Assistant Collectors in charge of the Revenue sub-divisions, in addition to his own Revenue and Magisterial duties; the office came under the following officers:—

Mr. Silcock, C. S., from 1st April to 5th June.
„ Logan, C. S., from 6th June to 6th August.
„ Symonds, C. S., from 7th August to 18th August.
„ Gibb, C. S., from 19th August to 31st March 1889.

36. Mr. Silcock had, up to the date of his departure, completed the settlement of the Khed and Háveli Tálukás and A'mbegaon Petha: he also effected the final settlement of the Koita holdings in Khed and A'mbegaon. His proceedings regarding the Bhiwegaon Koita holdings have been approved of by Government in their Resolution No. 4471-80 (Confidential), dated 7th July 1888, in the Revenue Department. The Demarcation and Settlement Report of the Háveli Táluka, referred to in paragraph 28 of last year's report, received the sanction of Government, in their Resolution No. 1327, dated 16th February 1889, Revenue Department; and the modifications recommended by Mr. Silcock in his supplementary report on the Junnar Táluka were sanctioned by Government in their Resolution No. 4826, dated 20th July 1888; in the Revenue Department. The Settlement Report of Mulshi has also received the sanction of Government in their Resolution No. 5471, dated 13th August 1888, Revenue Department, but a further reference has been made to Government upon some minor points.

37. Forest settlement enquiries in the eastern portion of the district were made by Mr Gibb from November to the end of March. Supplementary enquiries were also made as regards all forests in the several ranges. Complete records of rights have been drawn up; and thus, with the exception of Donja, a large forest village in the Haveli Táluka, and of the Singhar forests, the settlements of the district have all now been completed. 83 acres and 14 gunthás of occupied lands were acquired by purchase, the compensation amounting to Rs. 210, and 572½ acres of occupied lands were obtained by exchanges. The total area acquired amounted to 655 acres.

38. No special officer was employed in the Sátára Collectorate to carry on the settlement and demarcation work, but it was entrusted to the Deputy and Assistant Collectors in their Revenue sub-divisions. The officers engaged were Messrs. Snow, C. S., L. G. Deshmukh, and Scott. No fresh demarcation work was undertaken during the year. The Forest Settlement and Demarcation Report of the Válva Táluka, referred to in paragraph 29 of last year's report, was sanctioned by Government in their Resolution No. 7348, dated 5th November 1888, in the Revenue Department, but that of Pátan is still before Government. The negotiations entered into with Inámdárs, regarding the assignment of certain areas selected in their respective villages for purposes of forest conservancy, have not met with success; almost all the Inámdárs refuse to transfer the management of these lands to Government. Rs. 376-7-0 were expended in payment of compensation for acquiring 132 acres and 1 guntha of occupied lands for forests.

39. There is no demarcation left to be done in the Sholápur Collectorate, but Mr. B. R. Heblikar, District Deputy Collector, was Forest Settlement Officer, in addition to his Revenue duties. His work was confined to the settlement of lands which have been already included in the demarcation schemes of all the tálukás sanctioned by Government. 1,196 acres and 29 gunthás of lands were notified under Section 19 after the completion of the inquiries required by Chapter II of the Forest Act, into the existence of rights, &c.; and 17 acres and 30 gunthás were disforested during the year.

40. No demarcation work has been performed in the Surat Collectorate. There is, however, a considerable quantity of forest-land and waste-land, covered with a fair growth of teak and other trees in the Mándvi Táluka, available for forest conservancy, and required to perfect the existing scheme.

41. In the Panch Maháls Collectorate the demarcation and settlement of all the ranges had been completed last year. The only notification still to be

issued under Section 19 is that dealing finally with an area of 881 acres provisionally notified under Section 4 in Hálol. The question, as to whether the forests of the Hálol Mahál are to remain "Reserved" or to become "Protected", referred to in paragraph 32 of last year's Administration Report, has been decided, Government having ordered that they should remain Reserved Forests.

42. In the Kálol and Hálol Ranges the forest conservancy schemes are satisfactory in so far that all the forests are reserved and finality has been secured, but in the more important Range, Godhra, such is not the case. A considerable proportion of the natural forest area, which contains a valuable growth of timber, the maintenance of which is important upon other considerations than commercial, has been transformed into "Protected Forest," and a state of uncertainty prevails which interferes with the demarcation of forest boundaries upon the ground, and the application of systematic working arrangements.

43. The following Resolutions containing the final orders of Government were passed during the year on the Settlement and Demarcation Reports of Kálol, Jhálod and Dohad:—

No. 3280, dated 22nd May 1888, Revenue Department.
No. 332, dated 14th January 1889, Revenue Department.
No. 815, dated 1st February 1889, Revenue Department.

Under the orders contained, these valuable forests also, which protect uncultivable drainage slopes, remain protected forests, and their power of serving the general welfare of the part of the country in which they are placed is very appreciably decreased, because they are subjected to treatment which tends to destruction and in no sense to continuance and improvement.

44. No fresh selections of forest areas have been undertaken in Native States by Forest Officers from the Northern Circle during the year. The demarcation scheme of the Sudhágad Táluka of the Bhor State was finally sanctioned by Government in their Resolution No. 4917, dated 24th July 1888, in the Revenue Department. Mr. Shitárám Dámodar's report upon the Fife Lake catchment, which had not been received up to 31st March 1888, as stated in paragraph 36 of last year's report, was disposed of by Government in their Resolution No. 2479, dated 29th March 1889, Revenue Department, whereby, in respect of the Fife Lake catchment, Mr. Shitátám Dámodar's proposals, although not regarded as being altogether satisfactory and adequate, were accepted as a basis for the work, Government considering it to be impossible to recommence a fresh demarcation *de novo*. Mr. Shitárám Dámodar's scheme dealt with 73 villages wherein the Forest Committee, presided over by Mr. Joshua King, C. S., had proposed to reserve 54,616 acres under forest conservancy, or about $\frac{9}{16}$ of their total area. Mr. Shitárám whittled this down to 25,518 acres nominally, of which, however, 13,749 acres belong to the Pant's Government and 11,769 acres are the property of Inámdárs, and cannot be interfered with, for the present in any case; and practically, therefore, the protection to be afforded to the Fife Lake catchment is restricted to 13,749 acres, a proportion wholly insufficient to prevent an appreciable deposition of silt occurring every year, and from the experiments—partial and defective though they be—which have been made, and which exhibit a silt deposit rate during the rains of about 8 inches, it may possibly be said that the life duration of the lake has been brought within the range of arithmetical calculation.

45. The services of two Forest Officers, from the Northern Circle, Messrs. W. G. Clabby, Acting Assistant Conservator of Forests, 3rd Grade, and Wáman Gopál Tumne, Acting Ranger, 1st Grade, were lent to Foreign States during the year. Mr. Clabby has been sent to the Rájpipla State to be Forest Officer upon a gross salary of Rs. 466-10-8 *plus* Rs. 150 permanent travelling allowance, in order to introduce forest conservancy under the orders of the Administrator of that State; and Government in their Resolution No. 5494, dated 14th August 1888, in the Political Department, directed the transfer. Mr. Wámah Gopál Tumne has been sent to Káthiáwár to serve under the Political Agent upon a gross salary of Rs. 121, per mensem, *plus* Rs. 15 travelling allowance, for a period of two years, in order to select lands for plantations and for forest conservancy.

46. Mr. Walabhrám Mulji Bhat, Ranger, 2nd Grade, whose services had been lent to the Gondal State in 1883-84 as Superintendent of Forests, returned to British service during the year, under orders contained in Government Resolution No. 7449, dated 9th November 1888.

2.—FOREST BOUNDARIES.

47. A special forest boundary-mark has been prescribed for the Northern Circle, a specification of which is given in paragraph 31 of the Forest Administration Report for the year 1886 87, and in order to make the indication of the boundary lines clearer the following supplementary instructions were given during the year:—

(1). Three small stones are to be embedded in the ground at distances of six feet apart from the sides of the cairn, and to show a few inches above ground, in order to serve as pointers, to point out the direction of the boundary lines from the centre of the cairn.

(2). A dab of red colour to be given annually to each of the pointers at the time that the centre or indicating stone of the boundary cairn is colour-washed.

The work of demarcation by the erection of forest boundary-marks was carried on vigorously in the several divisions of the Northern Circle, in accordance with the standing orders. 33,958 boundary cairns, both large and small, were erected during the year at a cost of Rs. 11,948, as will be seen from the following table:—

No.	Division.	Length of Boundaries in Miles.	Number of Cairns erected.			Cost.		
			Large.	Small.	Total.	Rs.	a.	p.
1	North Thána	46	976	...	976	744	1	6
2	South Thána	95	800	1,680	2,480	1,249	10	0
3	East Khándesh	40	1,648	...	1,648	615	10	6
4	West Khándesh	469	566	943	1,509	481	10	0
5	Násik	713	778	10,634	11,412	3,554	3	2
6	Ahmednagar	52	202	412	614	271	2	6
7	Poona	581	1,786	7,007	8,793	2,809	10	9
8	Sátára	28	44	1,319	1,363	145	14	1
9	Sholápur	99	1,463	1,030	2,493	1,326	8	0
10	Surat	8	100	...	100	58	2	0
11	Panch Maháls	134	193	2,377	2,570	691	13	0
	Total ...	2,265	8,556	25,402	33,958	11,948	5	6

48. Although the demarcation of forest boundaries upon the ground by providing outward visible signs of forest reservation in the shape of a special forest boundary-mark, which from its peculiar construction, &c., will be known as a forest boundary-mark, wherever it may be seen, has made considerable progress, still the greater portion of this most important work remains to be undertaken, and several years must elapse before all the forest boundaries in every division are finally marked out in the manner prescribed.

3.—FOREST SETTLEMENT.

49. In the Thána Collectorate settlement inquiries were commenced in the tálukás of Máhím and Dáhánu, where the Divisional Forest Officer, Mr. Wilkins, had prepared and submitted lists of lands selected by him for permanent forest reservation in the Máhím, Dáhánu and Umbargaon Ranges, and all these forest-lands, the greater portions of which are protected forests gazetted under Section 34 of the Forest Act, had been notified provisionally under Section 4 of the Forest Act. The settlement inquiries which were in progress in the Váda Táluka, as recorded in paragraph 38 of last year's report, were completed during the year.

50. The reference to Government mentioned in paragraph 38, clause 2 of last year's report, regarding the decision of the Collector of Thána, was disposed of by Government, in their Resolution No. 6067, dated 7th September 1888, in the Revenue Department, referring the Conservator of Forests to the Commissioner, Northern Division, for orders. A reference was then made to the Commissioner, who in his No. 3312, dated 19th October 1888, sanctioned the appropriation, for reserved forest, of the lands in question.

51. The appeal to Government under Section 21 of the Forest Act, referred to in paragraph 38, clause 5, of last years's report in connection with certain rights in the village of Ghátkoper, awarded by the Forest Settlement Officer, was disposed of by Government during the year, in their Resolution No. 957, dated 6th February 1889, in the Revenue Department, whereby the decision of the Collector of Thána was not interfered with.

52. Ráo Sáheb Vishnu Rámchandra, Special Officer, Tánsa Water-works, has been appointed Forest Settlement Officer in respect of the occupied and other lands upon the Tánsa Lake catchment area, which have been acquired for afforestation.

53. In the Khándesh Collectorate Mr. Dodgson, C. S., has continued settlement proceedings. No rights, save of way and of water access, have been found to attach to any of the forests.

54. In the Collectorates of Násik and Ahmednagar the forest settlement has been practically completed. Certain lands, however, which have been notified recently under Section 4 were undergoing inquiries during the year.

55. In the Poona Collectorate the settlement work has been nearly completed. The reference made to Government regarding the decision of the Collector mentioned in paragraph 42, clause 2 of last year's Administration Report, was disposed of by Government Resolution No. 6067, dated 7th September 1888, Revenue Department.

56. In the Collectorates of Sátára, Sholápur, Surat and Panch Maháls no regular settlement work was undertaken during the year, beyond inquiries into rights, &c., respecting a few survey numbers which were previously occupied by survey tenants but had been recently acquired for forests and had been provisionally notified under Section 4 of the Forest Act.

57. The following statement will show the progress made during the year in forest settlements of the old forest areas which had been gazetted under Section 34 of the Forest Act in March 1879 :—

Class of Forest.		At the commencement of the year, Areas under Section 34 in which Private Rights have not been enquired into, settled and recorded.	Areas settled during the year.		Area of Reserved Forests alienated under Section 26.	Area of Protected Forests disforested under Government orders.	At the end of the year Areas under Section 34 in which Private Rights have not been enquired into, settled and recorded.	Remarks.
			Chapter II of the Forest Act.	Chapter IV of the Forest Act.				
		Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	Sq. m.	
Northern Thána...	Reserved ...	201	...	...	...	...	201	
	Protected ...	291	...	...	...	...	291	
Southern Thána...	Reserved ...	99	...	...	...	...	99	
	Protected ...	329	...	...	...	...	329	
Eastern Khándesh	Reserved ...	...	...	...	...	...	...	
	Protected ...	...	...	...	...	...	...	
Western Khándesh	Reserved ...	...	...	...	...	...	...	
	Protected ...	...	...	...	...	...	...	
Násik	Reserved ...	84	...	...	...	...	84	
	Protected ...	...	...	...	...	...	...	
Ahmednagar ...	Reserved ...	...	...	...	...	...	...	
	Protected ...	...	...	...	...	...	...	
Poona	Reserved ...	192	...	...	...	...	192	
	Protected ...	...	...	...	...	...	...	
Sátára	Reserved ...	...	...	...	...	...	...	
	Protected ...	...	...	...	...	...	...	
Sholápur	Reserved ...	...	...	...	...	...	...	
	Protected ...	...	...	...	...	...	...	
Surat	Reserved ...	733	...	...	...	...	733	
	Protected ...	...	...	...	...	...	...	
Panch Maháls ...	Reserved ...	152	105	...	4	...	43	
	Protected ...	...	...	...	...	...	...	
Total ...		2,081	105	...	4	...	1,972	

58. This statement does not show all the settlement work accomplished during the year, but only the progress made in the settlement of the old forest lands which had been gazetted under Section 34 of the Forest Act in March 1879.

4.—PRIVILEGES CONCEDED TO VILLAGERS.

59. Except in the Collectorates of Khándesh and Panch Maháls no changes have taken place during the year in the nature and extent of privileges previously conceded in reserved and protected forests, in all other Collectorates of the Northern Circle.

60. The code of privileges which was introduced last year in the Khándesh Collectorate under the authority of Government Resolution No. 7197, dated 22nd October 1887, was subjected to reconsideration by a Committee of local Revenue and Forest Officers, which met at Dhulia during the rains of 1888, and revisionary proposals were made to Government, which were sanctioned in Government Resolution No. 243, dated 11th January 1889, in the Revenue Department. The modifications thus effected are :—

(*1st.*) A rule that no privileged person shall be allowed to exercise his privileges by proxy, *viz.*, to send another person into the forests to take or enjoy that which has been conceded to him personally.

(*2nd.*) Interpretation given to the term "an inhabitant of a forest village" that it shall mean a permanent resident of the forest village.

(*3rd.*) Of minor forest produce, fruits of mango trees and Rosha grass are not at the disposal of privilege-holders but are reserved to Government.

(*4th.*) Four kinds of trees were added to the list of reserved trees, *viz.* Kalamb (*Nauclea parvifolia*), Haladvan (*Nauclea cordifolia*), Bor (*Zizyphus jujuba*), and Temru (*Diospyros montana*).

(*5th.*) An enhanced scale of grazing fees was introduced for professional graziers at the following rates :—

	Rs.	a.	p.
Cows and bullocks	0	6	0
Buffaloes	0	8	0
Calves under 1½ years	0	2	0
Sheep	0	1	0
Goats	0	4	0
Ponies, horses and donkeys ...	0	4	0

61. In the Panch Maháls Collectorate the extensive and, from a forestry point of view, destructive privileges which had been provisionally conceded in respect of the forest reservations in the Dohad and Jhálod Tálukás were confirmed during the year under the authority of Government Resolutions Nos. 332 and 815, dated 14th January and 1st February 1889. These privileges are—

(1.) *Grazing.*—Free for agricultural cattle.

(2.) *Grass-cutting.*—Free.

(3.) *Thorns and leaves.*—Free.

(4.) *Minor forest produce.*—Free, including mhowra.

(5.) *Dead wood.*—Head-loads free.

(6.) *Green wood.*—To cut all but 17 kinds of reserved trees for *bonâ-fide* domestic and agricultural purposes, when the wood is not obtainable elsewhere.

(7.) *Earth and Kankar.*—Free for domestic and agricultural purposes.

62. The forests of Jhálod and Dohad Ranges occupy the sides and tops of low hills where the ground is very rough, broken and steep, and where cultivation cannot, under any devices, find a permanent abiding place. The uplands and drainage slopes, when covered by dense forest growth, serve as natural reservoirs

for catching, impounding and distributing the rain water which falls upon them and supplying moisture to, and providing for, the natural irrigation of the cultivation down below in the plains. So long as these forests are well preserved they may be regarded as a Famine Insurance Fund, for they will provide fodder when there is no grass in the country and all outside the forests is parched and brown, and they will feed the subterranean arteries of natural irrigation, supplying water to wells for garden cultivation, &c., and will distribute water and moisture in other ways for the benefit of agriculture, at times when the rains are holding off. But when forests are exposed to the destruction of all but 17 kinds of trees, some of which are scarce, by villagers under no professional regulation, it follows that large blanks are created inside the forests in places where the reserved trees are few in number or sparsely represented, and that the latter are injured by sudden exposure to side light and to the action of winds, &c. Light is the deity trees worship, to which they turn in silent adoration; when trees are growing in close association, protecting each other in the healthy race towards the light overhead, clean cylindrical stems are produced, and good valuable timber, poles, &c., result. Forests into which a population is permitted to come and go at pleasure, with wood-cutting implements, fire, &c., to cut and take timber and other forest produce, are obviously difficult of protection against conflagrations and are liable to deterioration rather than improvement in respect of the trees which are forbidden to be cut. Forests thus circumstanced are upon the high road to utter destruction, and are a long way removed from the path to improvement. It is invariably urged in support of concessions and of free gifts of public forest property that liberal treatment in the supply of the domestic wants of the poor people inhabiting forest villages has always been considered necessary as an incentive to enlisting their co-operation in forest conservancy. This may be a commendable truism, but it depends upon the nature and extent of the "liberal treatment" as to whether the object is gained or not; when the treatment means a privilege of cutting and removing the trees, the presence of which in natural beauty and vigour is the symbol of forest conservancy, then it goes without saying that the treatment is radically wrong, for it can by no contrivances secure that object for the extinction of which all its energies are co-operating. A free gift to poor forest villagers of the whole, or of a share, of the actual annual produce of forests exploited under the due and regular working of Forestry becomes a simple financial question, and does not affect the well being of the forests themselves from which the timber, &c., may be removed; and liberal treatment of this description may possibly enlist sympathy and assistance in forest conservancy. It is not the revenue, or the interest legitimately accruing from the forest, to the sacrifice of which the Forest Officer so strongly objects, although his duty compels him to secure to the general revenues of the State, for the public good, the maximum interest the forests in his care and under his professional management are capable of yielding. It is the destructive attacks made upon the capital, dissipating the latter, and rendering the continuance of interest impossible, which the Forest Officer, from his professional education, perceives, when it is not apparent to the uninitiated, and which he finds so sore a burden n his conscience.

63. The expenditure incurred upon the formation and constitution of reserved and protected forests in the Northern Circle during the year has amounted to Rs. 90,053-12-2, distributed thus :—

	Rs.	a.	p.
(1) Salaries and travelling allowances not charged against the Forest Department	33,990	2	1
(2) Salaries and travelling allowances of establishments employed under the Forest Settlement Officers and charged in the forest accounts, and the contingent expenditure of the latter... ...	12,102	0	1
(3) Demarcation of forest boundaries upon the ground by the construction of special forest boundary-marks	11,948	5	6
(4) Compensation for land and rights	32,013	4	6
Total ...	90,053	12	2

CHAPTER II.

SURVEYS AND WORKING PLANS.

(*A*).—SURVEYS.

64. The institution of a special Forest Survey Branch for conducting topographical surveys of the forests of the Bombay Presidency is undoubtedly the historical event of the year, for it is a distinct and a remarkable advance in the march of progress. The Government of India, in their letter No. 1095, dated 5th November 1888, embodied in Government Resolution No. 7701, dated 19th November 1888, in the Revenue Department, approved and sanctioned the proposals of the Government of Bombay, regarding the general scheme for the conduct of forest surveys, which was discussed and agreed to at a conference of high officers of the Government of India and of the Bombay Government held at Poona on the 19th July 1888. These proposals provide :

1*st*.—One Survey Party of the Topographical Survey of India, fully equipped and manned, to be placed at the disposal of the Bombay Government for the purposes of Forest Surveys in this Presidency.

2*nd*.—The Survey Party to be utilised for Forest Survey purposes in such manner as the Bombay Government may direct.

3*rd*.—The cost of the party to be debited to "Forests": in other words half its cost to be borne by Imperial and half by Provincial Revenues.

4*th*.—The normal scale for the forest survey maps to be one of 4 inches to the mile, but on sufficient cause being shown by the Conservator of Forests, the Bombay Government may direct that the survey and maps of any special forest block or area be made on the 8 inches to the mile scale.

5*th*.—The map to be printed at the Poona Government Photozincographic Press, the charge being debited to "Forests."

6*th*.—Colonel Pullan, B. S. C., to be placed in charge of the Forest Survey Party as Superintendent of Forest Surveys, Bombay.

7*th*.—The officer at the head of the party to be granted the same travelling allowance as a Conservator of Forests and is to be under the control and supervision of the Survey and Settlement Commissioner, supervision over his work being also maintained by the Surveyor General of India.

8*th*.—The topographical survey of the non-forest portion of Kánara to be made by the Survey Party on the 2 inches to the 1 mile scale, and the Forest Survey to receive credit to the extent of Rs. 10,000 per annum on account of this work.

9*th*.—The annual cost of the Forest Surveys to be estimated at Rs. 71,000.

These arrangements came into effect from 1st October 1888.

65. The Forest Survey Parties were working during the year in the Districts of Násik, Thána, Poona and Sátára, and much useful work has been accomplished.

66. The following statement will show the progress reported to have been made during the year :—

District.	Triangulation.	Traverse.	Detail Survey.			Cost.	Remarks.
			W. L. 8″.	8″.	4″.		
						Rs.	
Násik	264·0	328·39	...	121·486	112·48	11,714	Nándgaon, Málegaon and part of Yeola Táluka.
Thána	180·0	64·47	17·991	...	...	4,908	Karjat, Bhiwndi and Kalyán Tálukás.
		180·0	...	...	128·52	8,739	Máwal Táluka.
Poona	40·0	228·0	...	...	76·0	5,504	Wái Táluka.
Sátára	...	...	...	...	...	11,409	Amount spent on preparation of fair sections of Nándgaon and Karjat Tálukás.
Násik and Thána ...	...						
Total ...	484·0	800·0	17·991	121·486	317·0	42,274	

67. It is impossible from the above figures to arrive at any correct average of the cost per square mile of the survey on either the 8″ or the 4″ scale, or to make a comparison with the cost incurred and the rates of previous years; but the Superintendent of Forest Surveys, Colonel Pullan, reports that the 8 inches survey has cost Rs. 187 per square mile and the 4 inches survey Rs. 65 per square mile, excluding mapping. These results show great improvement upon the rates of the two years preceding, for in 1886-87 the 8 inches survey cost Rs. 257 per square mile and in 1887-88 Rs. 272 per square mile. The work performed during 1888-89 would seem to be:

		Square miles.		
8″ scale	...	139·477,	cost Rs.	22,619.
4″ „	...	317·	„	20,605.

and the total cost of the Forest Surveys charged to the Northern Circle against the year amounts to Rs. 43,224.

68. That the present arrangement will provide excellent and highly useful maps upon the 8″ scale is unquestionable, but that the survey operations, in so far as the Northern Circle is concerned, are as economical and serviceable to the forest administration as might be, is a moot point. With reference to the forest maps on the 4″ scale, it should be remembered that the Conservator of Forests, Northern Circle, arranged with the Surveyor General, when the topographical survey of the districts comprising the Northern Circle was in progress, for the forest countries of the Thána and Panch Maháls Collectorates and of the leased Dángs to be surveyed and mapped upon the 4″ scale, the Forest Department paying at the rate of Rs. 50 per square mile for this survey, being the difference in cost between the ordinary 2 inches and the special 4 inches surveys. The undermentioned areas were thus surveyed and mapped on the 4″ scale:—

1. Násik Collectorate	...	...	42·6	Square miles.
2. Thána Collectorate	...	...	2698·	„
3. The Leased Dángs	...	...	655·5	„
4. The Panch Maháls	...	...	874·6	„
		Total	4,270·7	„

At Rs. 50 per square mile the total cost amounted to Rs. 2,13,500, which includes the supply of copies of each map without additional charge. Compared with the rates given by the Forest Survey Branch for forest maps on the same scale, Rs. 80 per square mile for Northern and Central India, a saving of Rs. 30 per square mile, or Rs. 1,28,100 in the total cost, would appear. The present arrangement is not so serviceable as might be, because the Forest Survey parties will not undertake the *parcellement* of the forests; they will not break up the forest blocks into compartments, surveying and marking out upon the ground the boundaries of these compartments, and consequently after the survey maps have been received, and in many cases before the maps are prepared, the Forest Officers have, by the agency of their own surveyors, to lay out and mark out the sub-divisions of forest blocks; and thus the same ground is gone over twice.

69. Experience of the map on the 4″ scale having demonstrated to the satisfaction of the Conservator and of the Divisional Forest Officers that the maps on this scale were practically inefficient for the elaboration of working plans based on area where the compartments and the coupes are, in force of local circumstances, of small size, and the country is rough and difficult, a reference was made to Government representing the advisability of adopting the scale of 8 inches =1 mile for all the teak reserves in the Northern Circle and for all the forests of the two Thána divisions: and Government in their Resolution No. 11, dated 3rd January 1889, sanctioned this proposition. It is improbable that in any other part of India the forests are worked upon a system of numerous small fellings distributed over a district. In the Thána Collectorate 230 coupes have been marked out for the season 1889-90, of which 130 are in North Thána and 100 in the South Thána Division. The average area of each of these 230 small fellings is 48 acres. A compartment of this size is, for all practical use, not discernible upon a map of the scale of 4 inches = 1 mile. In the bábul reserves of the Deccan Districts, which are located chiefly upon the

banks of rivers, the coupes average from 3 to 5 acres in area, because the erosive force of floods in the rivers would scour away the soil were extensive tracts to be cleared of trees upon these riparian estates which are subject to inundations; no map of *the least utility* of a 3 to 5 acres compartment could be produced, and it would be a simple waste of money to prepare elaborately surveyed forest maps, on the 4″ scale of the teak forests and the bábul forests, which are necessarily worked in this careful manner, and which contribute largely towards an expanding revenue of nearly 12 lákhs of rupees. Thus it will be seen that forest maps, on the cheaper scale of 4 inches = 1 mile, however admirably they may serve for all practical purposes for which forest maps are required in Northern or Central India where conditions are totally different, would be inefficient for a great portion of the Northern Circle.

(*B*).—WORKING PLANS.

70. Mr. T. B. Fry, Deputy Conservator of Forests, 3rd Grade, was in charge of the Working Plans Division throughout the year, with the exception of three months during the recess season while on privilege leave; and during this period Mr. R. C. Wroughton, Divisional Forest Officer of Poona, held charge of the office in addition to his own duties.

71. No alteration was made in the scale of the office establishment during the year, but a field establishment was entertained at different periods of varying strength within the sanctioned limit of cost according to the work required to be done.

72. The operations of the Working Plans Division were carried on in accordance with the system detailed in paragraph 67 of last year's report. The whole of the forest area included under Reserved Forests, and in certain tálukás under Protected Forests, in the two Divisions of the Thána Collectorate, was thus treated; and the following statement will show the particulars of the differentiation which has been effected :—

No.	Name of Range.	Total Area.	Number of Blocks per Range.	Number of Compartments actually laid out in 1888-89.	Average Area of Compartment.	Remarks.
	North Thána Division.	Acres.			Acres.	
1	Máhím	81,000	41	41	49	The number of compartments laid out is less than the number of blocks, because, *1st*, all blocks are not yet worked; *2nd*, blocking work was only completed late in the year; *3rd*, compartment work was completed in many Ranges either before April 1888 or after the 31st March 1889; *4th*, in certain cases compartments had not been felled.
2	Váda	80,320	25	28	80	
3	Umbargaon	35,889	15	9	62	
4	Dáhánu	70,884	28	22		
5	Sálsette	14,641	10	6	36	
6	Bassein	52,255	23	...	57	
	South Thána Division.					
7	Sháhapur and Khardi ...	157,812	53	20	74	
8	Murbád.	66,642	19	11	87	
9	Mokháda	47,540	16	...	74	
10	Bhiwndi	39,803	20	3	49	
11	Kalyán	32,497	17	13	47	
12	Karjat and Khálápur ...	51,954	20	8	65	
	Total ...	731,237	287	156	63	

73. The average area of the compartments of a range is arrived at by dividing the forest area of the range by the number of blocks multiplied by 40, *i.e.*, the number of years in the revolution; and it must be noted that the real average area of a compartment, and more especially of a coupe, is frequently considerably less than the normal area, because in laying out compartments for

working and coupes for exploitation, exclusions are made, from the total areas of blocks, of the portions of the latter where great height and the rugged character of the hills render the forests pratically unworkable, since forest growth upon steep slopes high up and upon scarps, &c., has to be preserved for climatic and mechanical purposes.

74. Satisfactory progress was made towards the erection of forest boundary-marks by the Working Plans Division in the Thána District during the year. With the exception of a few outlying forests of small area, the boundaries of all the reserved forests in Khálápur and Karjat Tálukás were properly defined upon the ground, by erecting 1,586 cairns at a cost of Rs. 970 in time to allow the Forest Survey Party to fix the position of each cairn. And 221 marks were erected in Bassein Range at a cost of Rs. 176. Ninety-five miles of outer forest boundary line were thus defined upon the ground by erecting in all 1,807 cairns at a cost of Rs. 1,146.

75. The average cost of laying out a single compartment, exclusive of the pay of the field establishment, was Rs. 4-12-8 against Rs. 5-13-0 in the preceding year, and the average cost per acre was Re. 0-1-8.

76. Mr. Fry, as usual, delivered lectures on Forestry at the College of Science, Poona, for the students of the Forest class during the rains, and on his departure on leave Mr. Wroughton carried on the duty and conducted the final examination also. Works, such as drawing and colouring in forest boundaries on maps of various scales, the revision of the work done during the season, preparation of block maps, &c., were in progress during the rainy season.

77. The expenditure under *A VIII c.* "Surveys and Working Plans" amounted during the year to Rs. 65,787-2-8, including the cost of Forest Surveys by the Topographical Survey Party of the Government of India, which amounts to Rs. 43,224.

CHAPTER III.

PROTECTION AND IMPROVEMENT.

1.—ESTABLISHMENTS.

78. There was no change during the year in the superior Forest staff allotted to the Northern Circle for the administration of the forests in 12 divisions composing the Northern Circle, which consisted of one Conservator of Forests, and thirteen Deputy and Assistant Conservators of Forests, as in the year before.

79. Messrs. W. S. Hexton and F. R. Desái, Deputy Conservators of Forests, 1st Grade, have been transferred from Sind to the Northern Circle. The following officers belonging to the superior staff were absent on privilege leave for the period stated against their names :—

(1) Mr. W. G. Betham, Deputy Conservator of Forests, 2nd Grade, from 5th April to 10th July 1888 ;

(2) Mr. H. Mainwaring, Deputy Conservator of Forests, 3rd Grade, from 2nd May to 1st August 1888 ;

(3) Mr. H. W. Keys, Assistant Conservator of Forests, 1st Grade, from 9th July to 9th October 1888;

(4) Mr. T. B. Fry, Deputy Conservator of Forests, 3rd Grade, from 6th August to 6th November 1888;

(5) Mr. W. S. Hexton, Deputy Conservator of Forests, 1st Grade, from 5th September to 5th October 1888 ;

and Mr. F. Gleadow, Deputy Conservator of Forests, 4th Grade, proceeded on furlough for 18 months on the 15th April 1888.

80. The services of Mr. Hornidge, Assistant Conservator of Forests, 1st Grade, were placed at the disposal of the Government of India for employment in the Central Provinces under orders contained in Government Resolution No. 2022, dated 14th March 1889.

81. There are 7 appointments of the class Sub-Assistant Conservators of Forests, allotted to the Northern Circle, and they have all been occupied throughout the year. Mr. Náráyan Ballál Oke, Sub-Assistant Conservator of Forests, 1st Grade, proceeded on privilege leave for one month on the 5th December 1888, and having been declared by medical authority to be unfit for further service under Government, his privilege leave was commuted into sick leave, and he finally retired on pension from 7th January 1889.

82. Mr. Ganesh Krishna Sháháne, Sub-Assistant Conservator of Forests, 2nd Grade, was on sick leave from the commencement of the year up to 11th June 1888, and was under suspension from 2nd November 1888 up to the close of the year on several charges of misconduct, of gross neglect of duty, of absenting himself from his charge without leave, and of insubordination, &c., which were brought against him by the Divisional Forest Officer, West Khándesh.

83. The numerical strength and constitution of the Subordinate Forest Protective Establishment has remained unchanged during the year; their monthly cost amounts to Rs. 21,503, and their distribution among the different divisions of the Northern Circle is given in the following statement:—

No.	Forest Division.	Number of Ranges.	Range Forest Officers.							Forest Guards.						Remarks.
			Rangers.				Foresters.									
			Rupees 100.	Rupees 80.	Rupees 60.	Rupees 50.	Rupees 40.	Rupees 30.	Rupees 20.	Rupees 15.	Rupees 12.	Rupees 10.	Rupees 9.	Rupees 8.	Rupees 7.	
1	North Thána ...	6	3	4	6	12	20	30	30	6	14	25	25	70	80	The pay of the Rangers and Foresters is personal and the men are transferred from one range to another as the exigencies of the service may require. Therefore the number of appointments in each grade is shown in lump for the whole Circle.
2	South Thána ...	8								8	14	25	23	70	115	
3	East Khándesh ...	13								8	16	20	20	40	75	
4	West Khándesh ...	10								7	14	18	18	50	102	
5	Násik	14								10	20	25	28	50	158	
6	Ahmednagar ...	11								6	12	22	22	50	85	
7	Poona...	11								9	17	26	25	60	120	
8	Sátára...	14								9	18	24	22	57	102	
9	Sholápur	7								3	6	11	8	16	68	
10	Surat	6								2	4	4	6	18	27	
11	Panch Mahals ...	5								2	5	10	10	30	48	
	Total ...	105	3	4	6	12	20	30	30	70	140	210	205	511	980	

84. The temporary protective establishment which was in entertainment, last year, in the Poona and Násik Divisions to strengthen the permanent staff for the proper conservancy of the forests, continued at the same strength during the year:—

No.	Division.	Forest Guards.		
		Rs. 8.	Rs. 7.	Total.
1	Poona	15	30	45
2	Násik	3	3	6
	Total ...	18	33	51

85. All the Divisional Forest Officers in the Northern Circle complain that conservancy and works in their respective divisions suffer owing to the numerical insufficiency of forest guards, and of higher class subordinate officers to supervise and direct the beat-guards, and to act as overseers on works, and that the revenues derived from the forests would be greater if the forests were to be more closely protected, and worked more up to their capabilities, which can only be done by the agency of increased establishments together with the curtailment of privileges.

86. The very extensive privileges conceded to, and exercised by, forest villagers in all divisions add to the difficulties of protection, for people come and go into the forests at all times with cutting implements and with fire, and their operations are under no proper control; they cut and take, they set fire to forests and disappear. In paragraphs 76 to 90 of the report of last year the insufficiency

of establishments, and the defects in the constitution of existing establishments have been noted, and propositions have been submitted to Government during the year for a complete re-organization of the subordinate Forest staff.

87. There was no change in the strength and constitution of office establishment during the year. The following table will show the sanctioned complement for the several divisions and their monthly cost:—

No.	Division.	Number and Gradation.											Monthly Cost.
		Clerks.								Peons.			
		Rs. 100	Rs. 80	Rs. 60	Rs. 50	Rs. 40	Rs. 30	Rs. 20	Rs. 15	Rs. 10	Rs. 9	Rs. 8	
													Rs.
1	Direction	1	1	1	2	2	2	2	...	1	1	5	579
2	North Thána	...	...	...	1	1	1	1	2	...	1	3	203
3	South Thána	...	...	...	1	1	1	1	2	...	1	3	203
4	East Khándesh ...	...	...	...	1	..	1	2	2	...	1	3	183
5	West Khándesh ...	...	...	...	1	...	1	2	2	...	1	3	183
6	Násik	...	...	...	1	..	1	2	2	...	1	3	183
7	Ahmednagar	...	...	...	...	1	1	2	2	...	1	3	173
8	Poona	...	...	...	1	...	1	2	2	...	1	3	183
9	Sátára	...	...	...	1	...	1	2	2	...	1	3	183
10	Sholápur	...	...	...	...	1	1	2	1	...	1	3	158
11	Surat	...	...	...	1	...	1	2	2	...	1	3	183
12	Panch Mahál	...	...	...	...	1	1	2	1	...	1	3	158
13	7 Sub-Assistant Conservators' offices ...	..	...	—	...	...	...	...	7	...	...	14	217
	Total ...	1	1	1	10	7	13	22	27	1	12	52	2,789

88. The total expenditure incurred upon Forest establishments during the year has amounted to Rs. 4,60,100-7-6 under the following Budget sub-heads:—

	Rs.	a.	p.
B. *I. a.*—Conservator's salary	18,000	0	0
B. *II. a.*—Conservator's travelling allowance ...	2,400	0	0
B. *I. b.*—Superior officers' salary	1,01,985	11	10
B. *II. b.*—Superior officers' travelling allowance ...	25,688	12	5
B. *I. c.*—Subordinate protective establishments' salary	2,53,131	0	6
B. *II. c.*—Subordinate protective establishments' travelling allowance	14,524	5	3
B. *I. d.*—Office establishments' salary	33,084	15	0
B. *II. d.*—Office establishments' travelling allowance.	11,285	10	6
Total ...	4,60,100	7	6

2.—GENERAL PROTECTION AND BREACHES OF THE FOREST LAW.

89. The following statement gives the number and result of prosecutions of Forest offences during the year as compared with that of the past year:—

No.	Division.	1887-88.		1888-89.		Percentage of Failures.	
		Prosecutions.	Acquittals.	Prosecutions.	Acquittals.	1887-88.	1888-89.
1	North Thána ...	61	22	72	34	36·0	47·2
2	South Thána ...	185	34	209	51	18·3	24·4
3	East Khándesh ...	15	5	48	15	33·3	31·2
4	West Khándesh ...	71	20	126	27	28·1	21·4
5	Násik	79	19	48	5	24·0	10·4
6	Ahmednagar ...	53	14	53	15	26·4	28·3
7	Poona	66	20	279	47	30·3	16·8
8	Sátára	44	10	44	17	22·7	38·6
9	Sholápur	77	23	101	34	29·8	33·6
10	Surat	33	3	9	...	9·0	...
11	Panch Mahals ...	25	1	42	10	4·0	23·8
	Total ...	709	171	1,031	255	24·1	24·7

90. Out of 1,139 cases, made up of 112 cases that were pending at the close of last year and 1,027 new cases presented during the year, 1,031 were disposed of, as shown above; leaving 108 cases pending at the close of the year in the different divisions as under :—

No.	Division.	Number of Cases.
1	South Thána	14
2	East Khándesh	2
3	West Khándesh	20
4	Násik...	14
5	Ahmednagar	6
6	Poona	33
7	Sátára	1
8	Sholápur	18
	Total ..	108

91. In consequence of the exemption of timber and other produce growing in private lands from the operation of the rules under Section 41 of the Forest Act, and to the ease with which timber illicitly cut in Government forests can be passed off as coming from málki lands which adjoin and interlace the former, the detection of offenders continues to be of considerable difficulty, especially with a staff of forest guards numerically insufficient to maintain close watch over, so as to effectively protect, the extensive areas of forest-land which have been constituted Reserved and Protected Forests.

92. From the statement given above it will be seen that there is an increase of 322 in the number of prosecutions as compared with the figures of last year; this increase is due to increased vigilance on the part of the protective staff. The percentage of failures in prosecutions is about the same as obtained last year.

93. The classification, as prescribed by the Forest Department Code, of Forest offences in respect of which prosecutions have been instituted during the year is given in the following table :—

No.	Division.	Character of Offences.				Remarks.
		Injury to Forest by fire.	Unauthorized felling or appropriation of Wood and minor Forest Produce.	Grazing without permission or in tracts in which Grazing is prohibited.	Other Offences.	
1	North Thána ...	...	57	.....	8	
2	South Thána ...	1	173	3	27	
3	East Khándesh ...	...	31	3	8	
4	West Khándesh ...	11	16	2	78	
5	Násik	...	35	10	7	
6	Ahmednagar ...	...	12	18	20	
7	Poona	...	82	197	33	
8	Sátára	2	20	10	5	
9	Sholápur	1	5	81	22	
10	Surat	...	5	.....	2	
11	Panch Mahála ...	...	38	.....	4	
	Total ...	15	474	324	214	

94. The Forest offences which were detected in the Protected Forests of the unsettled tálukas of the Thána Collectorate were disposed of by Assistant Collectors in accordance with Government Resolution No. 7844, dated 3rd

October 1884, under Section 43 of the Land Revenue Code, and do not appear in the foregoing statement :—

Forest Division.	1887-88.					1888-89.					Remarks.
	Number of Cases.	Value of Forest Produce.	Acquittals.	Convictions.	Amount of Fines.	Number of Cases.	Value of Forest Produce.	Acquittals.	Convictions.	Amount of Fines.	
		Rs. a. p.			Rs. a. p.		Rs. a. p.			Rs. a. p.	
North Thána...	13	66 10 0	...	11	31 10 0	42	275 15 0	...	42	275 15 0	
South Thána ...	92	355 9 0	...	92	104 4 2	61	89 6 9	...	61	118 12 3	
Total ...	105	422 3 0	...	103	135 14 2	103	365 5 9	...	103	394 11 3	

95. Some serious cases of dálhi cultivation made unauthorizedly within Reserved Forests in the Karjat and Khálápur Ranges of the South Thána Division occurred during the year. The Thákurs on the slopes of Mátherán were detected encroaching deliberately on the Government forests, cultivating by means of the axe and fire beyond the limits of the lands which had been allotted to them and had been demarcated by stone cairns; and by orders of the Collector heavy assessment was taken from the offenders in respect of the forest areas cleared and cultivated by them.

96. The following is a comparative statement of the number of cases compounded under Section 67 of the Forest Act in the several divisions of the Northern Circle:—

Number.	Division.	Taken into Court.		Compromised under Section 67 of the Forest Act.		Total Number of Cases.	
		1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
1	North Thána	68	65	26	38	94	103
2	South Thána	191	204	182	306	373	510
3	East Khándesh	20	42	153	280	173	322
4	West Khándesh ...	72	107	254	454	326	561
5	Násik	83	52	714	1,137	797	1,189
6	Ahmednagar	48	50	2,115	2,199	2,163	2,249
7	Poona	63	312	449	439	512	751
8	Sátára	50	37	186	250	236	287
9	Sholápur	81	109	977	952	1,058	1,061
10	Surat	35	7	21	17	56	24
11	Panch Mahals	25	42	65	82	90	124
	Total ...	736	1,027	5,142	6,154	5,878	7,181

97. The amounts realised on account of cases compounded under Section 67 of the Forest Act in the several divisions of the Northern Circle during the year are as under :—

Number.	Division.	Amount.		
		Rs.	a.	p.
1	North Thána	352	2	9
2	South Thána	1,202	9	10
3	East Khándesh ...	973	0	6
4	West Khándesh ...	1,557	7	7
5	Násik	1,736	0	6
6	Ahmednagar	2,463	2	9
7	Poona	1,459	7	9
8	Sátára	305	7	1
9	Sholápur	1,054	5	10
10	Surat	71	0	0
11	Panch Mahals ...	97	2	4
	Total ...	11,271	14	11

98. The number of cases compounded during the year has increased in almost all divisions. The scarcity of fodder for cattle which was felt during the year in some of the Deccan districts induced much trespassing of famishing cattle into plantations and closed forests.

99. The number of cattle of different kinds impounded during the year under Section 69 of the Indian Forest Act for trespassing in plantations or in closed portions of forest reservations in the several divisions of the Northern Circle is given in the following statement :—

No.	Division.	Cows and Bullocks.	Buffaloes.	Camels.	Horses.	Asses.	Sheep.	Goats.	Total.
1	North Thána ...	259	36	...	...	...	...	...	295
2	South Thána ...	184	...	...	...	...	...	...	184
3	East Khándesh ...	3,814	3,512	...	16	...	106	2,420	9,862
4	West Khándesh...	9,135	1,072	1	220	4	4,690	5,122	20,244
5	Násik	4,575	425	...	78	28	3,363	4,961	13,430
6	Ahmednagar ...	34,079	4,050	...	654	76	37,039	10,241	86,139
7	Poona	8,857	1,758	...	72	54	10,815	6,629	28,185
8	Sátára	5,513	582	...	62	12	5,612	2,352	14,133
9	Sholápur ...	15,824	3,637	...	193	5	7,186	533	27,378
10	Surat	121	72	...	...	...	...	17	210
11	Panch Mahál ...	83	136	11	1	78	...	246	555
	Total ..	82,444	15,280	12	1,290	257	68,811	32,521	200,615

100. It will be seen that larger numbers were impounded in the Deccan divisions than elsewhere. Owners of sheep and other cattle purposely drive their animals into closed forest to graze at the risk of detection, and impounding once or twice in the course of a year, and they willingly pay the pound fees which are manifestly less than the value of the grazing the animals enjoy, and the fact points to the conclusion that the rates of grazing fees charged by the Forest Department are much lower than might be reasonably demanded, and it is well known they are much less than villagers who possess pasturage lands demand of their neighbours.

3.—CIVIL SUITS.

North Thána Division.

101. A suit was brought by one Balvantrao Hari Gavankar against the Forest Department in the District Court of Thána to recover Rs. 200 which he paid as earnest money to the Divisional Forest Officer, North Thána, at the time of making a tender for the timber in the Karjon compartment of the Bassein Range, which he subsequently repudiated. This suit was not heard up to the close of the year. Government in their Resolution No. 4309, dated 14th June 1839, Revenue Department, have undertaken to defend this suit.

South Thána Division.

102. There were three civil suits brought against the Forest Department in this division in the District Court of Thána during the year :—

First, by Alli valad Mohidin Pátil of Bhiwndi for Rs. 100, claiming Rs. 50 as compensation for losses sustained by breach of contract and the return of Rs. 50 deposited by him. In 1885 certain felled firewood had been sold to this contractor at the rate of Rs. 1-5-3 per cart-load; after removing about 40 cart-loads of the wood in the ordinary cart of the district he introduced carts from Bhiwndi capable of carrying twice the quantity of wood of the local cart, and on being prevented from using these carts he struck work and filed the suit, which Government in their Resolution No. 4777, dated 18th July 1888, Revenue Department, sanctioned to be defended, but it had not been decided up to the close of the year.

Second.—By Vithu Mahad Pátil of Murbe for Rs. 459-5-7. The circumstances of the case are, that of certain timber which had been sold to this man he refused to take delivery of a quantity valued at Rs. 350-5-7 on the plea that it was damaged. This Department then, upon the grounds that the timber had been damaged through Vithu's fault, recovered the above sum from him under the Forest Act, and he then instituted a suit claiming the return of the amount *plus* Rs. 100 for loss of profit and expenses. Under orders contained in Government Resolution No. 5110, dated 30th July 1888, in the Revenue Department, the case was compromised, according to the advice of the Legal Remembrancer by repayment to Vithu Mahad Pátil of the sum of Rs. 350-5-7 *plus* Rs. 59-4-1, on account of expenses.

Third.—By one Parbhudas Govindaji Thaker of Dáhánu for Rs. 823-8-0 for loss alleged to have been sustained by him owing to the issue of passes to cover the removal of bámbus which he had cut in a departmental contract having been refused to him by the Range Forest Officer, who entertained suspicions regarding the material. The defence of this suit was sanctioned in Government Resolution No. 309, dated 16th January 1888, and the District Judge of Thána passed a decree partly in favor of the plaintiff and partly in favor of Government, awarding to the plaintiff Rs. 321 for damages and Rs. 112-4-9 on account of expenses.

Poona Division.

103. It was reported in paragraph 110 of last year's report that the High Court reversed the judgment of the Small Cause Court in the case of Dipchand Balkisan Lodhi *vs.* Mr. Waman Ramchandra Gaunde, Sub-Assistant Conservator of Forests. The Subordinate Judge in the meanwhile refused to delay the execution of the decree, and the amount of Rs. 435-2-11 was paid by Mr. Gaunde to Dipchand. When the judgment was reversed an unsuccessful endeavour was made to recover this money from Dipchand Lodhi, but no assets belonging to Dipchand could be found. Following the judgment of the High Court, Dipchand instituted a fresh suit in the District Court of Poona, and Government in their Resolution No. 7028 of the 23rd October 1888, sanctioned its defence upon the lines recommended by the Legal Remembrancer, but up to the close of the year the case had not been completed.

4.—FOREST FIRES.

104. Fire conservancy has received very considerable attention during the year under the working of the circular order referred to in paragraph 111 of last year's report, and although the total area traversed by fires is recorded as greater this year than of last year, still the result is not unsatisfactory when all the circumstances are taken into account, for fire conservancy is affected by various conditions, in some years they are favourable and in other years they are inimical. The year of the report was what may be termed "a dry year" in the Deccan and Khándesh, for the monsoon rains were delayed and the fall was abnormally small, and there was an absence of late heavy rains in parts of the country, so that the forests became inflammable earlier in the season than ordinarily, and were more ready to burn later on than happens when the springs and pools do not dry up so quickly, and there is more moisture on all sides. This state of things renders a comparison between the results of the year of this report and of the preceding year no fair test of the exertions of the forest subordinates and of the co-operation of forest villagers in protection against fires. A complete report regarding every fire was drawn up and submitted to the Conservator by the Divisional Forest Officer, and thus the proceedings of all parties, who were responsible for fire conservancy where fires appeared, came under close inquiry.

105. For fire conservancy to be effective all round, a numerically sufficient permanent staff of forest guards is required to be employed. Temporary watchers, who have very little to gain and nothing to lose, are not worth their cost on this side of India where labour is comparatively dear. It is possible, as has been stated, that the forest protective establishment of the Northern Circle is as numerous as anywhere in Europe, but the conditions of Western India and of

Continental Europe are so very widely divergent that no reasonable comparison can be drawn from mere numbers. The indigenous forest guard is not nearly so capable a man as is his confrère in France, or Germany, or elsewhere in Europe, and the local conditions which affect forest conservancy bear no similarity The State forests of Continental Europe are not open to the world to come and go. The pot-hunting shikári is not permitted to roam over the forests with a rusty matchlock, or an old percussion musket, to go wheresoever he may list, to take axes and cutting implements with him, to carry fire and the means of kindling fire in his pouch, to build ambuscades over water and pathways from which the timid hind and its fawn can be mercilessly slaughtered. The pot-hunting shikári finds the forest undergrowth against him, for it affords cover to deer and other animals, and it prevents him seeing the animals as they approach his place of ambush, so he strikes a light, sets fire to the grass, &c., and strolls away in another direction until fire has effected the clearance desirable to his murderous game, and he is a long way from the spot by the time the forest guards and forest villagers attracted by the rising smoke have come to extinguish the fire and discover its cause. If seen by them there is no direct evidence to convict the man, who has the privilege to come and go, with the fire; he has a story cut and dried to account for his presence, and he probably joins the band who are zealously attacking the fire, and is commended, and may be rewarded, for the assistance he has given. The dead-wood privilege is a fruitful source of fires, for when the natural supply fails the axe and fire readily manufacture the article, which may be taken for domestic use and for barter and for sale. Where such conditions adverse to fire conservancy prevail, especially strong establishments to guard and to patrol are necessary, and the strongest staff cannot always secure the salvation of a forest against fire.

106. It is very satisfactory to note that forest villagers do take an interest in fire protection, inasmuch as they turn out readily to help in putting out fires which have occurred; but it must at the same time be recorded against them that they do not give any information regarding the cause of a fire, and their assistance in detecting the shikári, or the privilege-holder, or the negligent ráb-burner, or the careless way farer, who may have set the forest on fire, cannot be counted upon, for such proceeding may lead to reprisals, as the man who is the informant one day may be the offender the next.

107. In the North and South Thána Divisions decided improvement can be recorded, the total area burnt being 15,049 against 19,848 in the preceding year in the former, and 13,914 against 17,121 acres in the latter division. The usual precautions of burning fire traces along spurs and ridges and the most frequented foot-paths and cart-tracks to prevent fires invading and spreading, were adopted. Warnings were also issued to forest villagers in the sense of Government Resolutions Nos. 4120, 1942 and 1751, dated 21st May 1885, 24th March 1888 and 4th March 1889, that privileges upon the forests might be suspended if fires should prevail; but the condition directed in Government Resolution No. 1942, dated 24th March 1888, that one-third of the forest area must have been burned before the exercise of privileges can be stopped, deprives the ordinance of its utility, as very seldom, if ever, do the forest guards and villagers display such dilatoriness, or negligence, as to permit one-third of the forest area of a village to be burned by a fire, however deliberately it may have been planned and ignited. Into the forests of the Thána District the native shikáris crowd, for there are licensed and unlicensed guns in almost every village. From the Jowhár State the pot-hunter invades the Thána forests, and these shikáris go about in large bands—a gang of over 100 men were met by the Conservator in the Harischandragad forests. And so long as they are not detected in doing anything that is forbidden they cannot be interfered with in the absence of game laws.

108. In the East Khándesh Division, although the area burned is somewhat less than that of the preceding year, still no appreciable improvement can be looked for so long as the privilege-holder may range the Sántpuda forests from end to end: here the undergrowth is fired out of fear of wild animals, and not for the purpose of manufacturing dead-wood, or to conceal thefts of timber, as is done in the Thána District, where kerosine oil is poured upon the bleeding

stumps of freshly felled trees so that the fire may remove the traces of recent felling.

109. Notwithstanding all the efforts the Forest Department in West Khándesh Division, under Mr. Fagan's energetic direction, have made to prevent and check fires, the portion burnt during the year was much larger than of the past year, being 643,169 acres against 476,454 acres in 1887-88, a dry season having been more conducive to fires. The people have legal access to all and every part of the forests of this division also, and so long as the Forest subordinate staff is not strong enough to watch in every direction, such high results as are obtained in divisions easier to protect cannot be expected. The Bhil is a born shikári, and forests are fired to clear undergrowth which gives cover to game and conceals rat-holes, and they are likewise fired so that a nice thick layer of ashes will facilitate the tracking of animals to their lairs, foot prints in the ashes being as clear and visible as in freshly fallen snow. The collection of mhowra and of honey is also conducive to fires occurring in the Sátpuda forests.

110. In all the Deccan divisions of the Northern Circle, except Násik and Sholápur, the spread of fires during the year was not so great as during the preceding year. More cattle were admitted into the Násik and Sholápur forests to graze, owing to the failure of pasturage elesewhere, and the forests were more inflammable; and thus the causes of fire were more prevalent. In the Surat Division the leased Dángs, which owing to their local circumstances are not subjected to strict forest conservancy, have caused the area burnt to be so very large. Here the Bhils and wild classes can do whatever they like, even to making Dáhli inside the forests, and thus fire conservancy is practically non-existent. The portion of the Dángs forest fired during 1887-88 was not reported correctly in last year's returns.

111. The following is a comparative statement of forest fires :—

No.	Division.	Area burnt, 1887-88.	Area burnt, 1888-89.
		Acres.	Acres.
1	North Thána	19,848	15,049
2	South Thána	17,121	13,914
3	East Khándesh	16,247	15,867
4	West Khándesh	476,454	643,169
5	Násik	2,333	12,074
6	Ahmednagar	2,935	2,555
7	Poona	2,429	1,635
8	Sátára	993	481
9	Sholápur	1,393	1,852
10	Surat	27,029	298,531
11	Panch Mahális	39,494	11,088
	Total ...	606,276	1,016,215

112. It may be that the forest area attempted to be protected against fire is greater than the reserved and protected forests of the Circle put together as appearing in the forest area statements; but this can be explained by the fact that the forest and waste lands which are provisionally notified from time to time, and are not finally settled and constituted reserved forests before the end of the year of the report, do not appear in Form No. 49 and in the total of reserved or protected forests, but every acre of forest land directly it is handed over to the charge of this Department is put into a "beat", and is brought under protection against thieves and fire by the agency of a forest guard; and hence the apparent discrepancy between the figures, which the Government of India have remarked upon in paragraph 11 of their letter No. 816-F, dated 5th August 1889, upon the Forest Administration Reports of the Bombay Presidency for 1887-88.

113. The expenditure upon fire conservancy has amounted to Rs. 1,697-6-0, which may be considered to be a small outlay; it does not include pay of special

watchers, for no such staff is employed in the Northern Circle, but it represents payments made to forest villagers either as wages, or as rewards, for working in the extinguishment of forest fires.

114. Fire statistics, more especially when they enter into minute details, must be regarded with considerable caution, because the portion of a forest which may be burned is never surveyed and measured to ascertain the exact area covered by the fire, and the area that escaped. The figures which appear in the returns are mere estimates, and the tendency on the part of a forest officer, who is directly responsible for fire protection, is to decrease and not to magnify the proportion of failures. Possibly in this Presidency the estimates are as correct as, if not more nearly accurate, than in other parts of India, because the Revenue Survey Department has demarcated and mapped the entire country into survey numbers, the acreage of which has been ascertained by cross staff and theodolite survey measurement, as the case may be, and is recorded, and the boundaries of these survey numbers exist upon the ground, and their presence affords a guide for determining the acreage of a fire. The following statement will give the results of fire-protection during the year :—

No.	Division.	Forest Acreage.	Acreage burned.	Percentage burned.	Total Expenditure incurred.	Remarks.
		Acres.	Acres.		Rs.	
1	North Thána	381,296	15,049	3·9	1,106	
2	South Thána	434,965	13,914	3·1	473	
3	East Khándesh ...	545,921	15,867	2·9	22	
4	West Khándesh ...	917,567	643,169	70·0	45	
5	Násik	817,828	12,074	1·4	36	
6	Ahmednagar	556,885	2,555	4·5	...	
7	Poona	473,748	1,635	0·34	...	
8	Sátára	426,269	481	0·11	15	
9	Sholápur	174,526	1,852	1·0	...	
10	Surat	478,524	298,531	62·3	...	
11	Panch Maháls... ...	206,381	11,088	5·3	...	
	Total ...	5,413,910	1,016,215	18·7	1,697	

5.—GRAZING AND FODDER-GRASS.

115. The revenue from grazing and fodder-grass has increased considerably during the year, being Rs. 78,310 over and above the receipts of the previous year, and the steady expansion of this source of revenue which has been going on during the past ten years, as will be seen from the following figures, has been more than maintained :—

	Rs.
1878-79	... 42,629
1879-80	... 64,613
1880-81	...1,00,443
1881-82	...1,41,765
1882-83	...1,64,444
1883-84	...1,97,963
1884-85	...2,25,853
1885-86	...2,32,650
1886-87	...2,37,126
1887-88	...2,48,855
1888-89	...3,27,165

116. The abnormal increase of the year is probably due chiefly to closed forest areas having been opened to the grazing of cattle at the request of Revenue officers, and with the approval and sanction of Government, on payment of fees in the Deccan districts of the Northern Circle owing to scarcity of fodder, which the delayed monsoon rainfall had caused. On the other hand the gradual improvement in quality and quantity of grass, which is mainly due to forest con-

servancy, has much to do with the expansion of revenue under this head, as the progressive augmentation of prices realized in auction sales of the grass in certain areas, which is sold for cutting and removal, evidences.

117. The following statement exhibits the working plan of the forests of the different divisions in respect of grass and grazing for the year :—

No.	Division.	Valuable Kurans.		Fee Grazing.			Auction Grazing.		Free Grazing.			Grass given to Commissariat Department.		Area closed to Grazing.	Miscellaneous Grazing Revenue.	Total Grazing Revenue.
		(a) Area.	(b) Amount realized.	(a) Area.	(b) Number of Animals grazed.	(c) Amount realized.	(a) Area.	(b) Amount realized.	(a) Area.	(b) Number of Animals grazed.	(c) Money value of the privilege or right.	(a) Area.	(b) Amount			
		Acres.	Rs.	Acres.		Rs.	Acres.	Rs.	Acres.		Rs.	Acres.	Rs.	Acres.	Rs.	Rs.
1	North Thána ...	10,612	13,316	...	...	...	...	...	353,014	171,750	42,937	...	...	9,758	...	13,316
2	South Thána ...	4,005	871	416,044	20,117	6,380	...	...	...	178,886	25,000	...	...	14,916	48	7,299
3	East Khándesh ...	31,195	14,541	378,391	199,069	25,318	...	...	...	11,829	1,375	...	...	136,335	6,513	46,372
4	West Khándesh ...	20,653	4,610	831,625	696,577	43,269	177	...	...	81,007	9,049	...	...	65,112	6,961	54,879
5	Násik	36,282	16,608	508,069	247,689	24,916	...	...	180,286	248,382	36,800	...	...	93,191	1,769	43,293
6	Ahmednagar ...	4,601	2,991	361,950	213,175	33,187	8,078	1,734	14,361	56,771	1,704	1,067	4,387	165,341	2,952	40,864
7	Poona	54,449	38,595	118,489	67,000	10,734	84,797	2,098	145,095	...	50,000	11,322	35,000	61,631	928	52,355
8	Sátára	57,682	28,105	83,124	31,929	4,392	91,379	7,968	135,563	...	17,500	...	...	30,792	35	40,500
9	Sholápur	34,643	8,919	42,385	71,469	11,049	20,131	586	12,293	70,742	9,196	...	...	65,073	1,275	21,769
10	Surat	...	...	40,885	5,981	650	3,399	144	381	...	69	...	...	...	...	794
11	Panch Mahals ...	17,572	2,282	19,410	9,718	3,447	...	...	135,000	58,000	15,000	...	...	1,025	4	5,733
	Total ...	271,694	1,30,868	2,800,372	1,562,784	1,63,342	207,961	12,530	975,993	877,367	2,08,630	12,389	39,387	633,175	20,425	327,165

118. Much damage, difficult of detection, is caused to forest growth by herdsmen in charge of cattle, who lop off the branches and the young shoots of trees, so that the cattle may feed on the leaves. This is more especially the case in years like this under report, when the rainfall has been scanty and fodder scarce in consequence. The preservation of grass on hill slopes, which have been denuded of all superior vegetation, is essential to guard against the occurrence of floods. It is not only the replanting of hill sides with trees that serves this purpose, but grass contributes to it in many ways: it absorbs much water itself, and it retards the progress of water down a slope, when the growth is thick and luxuriant, and thus gives the earth time to take in much of the fallen water that would otherwise pass over it, and grass is a potential agent in forming soil, for its roots break up the hard ground and open the pores of the earth. For these and other similar reasons the exclusion of sheep and goats from grazing areas on hill slopes placed under treatment for reboisement is the first step towards improvement, for these animals being close feeders tear up the grass root stocks, and thereby cause not only the utter destruction of the pasturage of cattle, but accentuate denudation also.

6.—FENCING.

119. In the North Thána Division wire fences, 5¼ miles in length, were erected during the year in the Sálsette Range at a cost of Rs. 230-9-10; and wire fences round the Wankas Kamare and Khaire plantations in the Máhím Range were repaired at a total cost of Rs. 48-1-3. The euphorbia fence round the casuarina plantation in the Dáhánu Range was put into order at a cost of Rs. 5-8-0.

120. 78,831 running feet of prickly pear fencing were planted at a cost of Rs. 421-10-9 in the Ahmednagar Division, and 15,457 feet by the forest guards without extra cost.

121. In the Sátára Division 44,407 running feet of aloe hedging were planted at a cost of Rs. 218-2-2, and chilari seed was also sown in furrowed lines round some of the plantations, and the old aloe fences were also repaired.

122. The following statement will show the fencing operations which were carried on in five out of seven ranges of the Sholápur Division during the year, the material used being "sher," *Opuntia tirucalli*, and prickly pear, *Opuntia dillenii*:—

No.	Range.	Running feet.	Amount.
			Ra. a. p.
1	Sholápur	12,135	125 5 0
2	Bársi	2,574	25 4 0
3	Mádha	3,250	35 10 0
4	Karmála	3,640	35 8 0
5	Pandharpur	4,875	20 0 0
	Total ...	26,474	241 15 0

7.—NATURAL REPRODUCTION.

123. Concurrently with the establishment of fire conservancy natural reproduction has made more decided and satisfactory progress. In the two Thána divisions during the rainy season, the germination of self-sown seeds is profuse, and seedlings carpet the ground throughout the forests, teak, ain and khair being especially abundant. In this connection it will not be out of place to give an extract from the North Thána Divisional Forest Officer's diary for the month of December 1888; against the 20th it is recorded:—

"On the way inspected the closed portion of the forests in the village of Rabale and Ilton, neither of these has been enclosed with wire-fencing, &c. In Rabale the portion of the forest selected for closure is very suitable for planting operations, already there is a fairly dense growth of brushwood and along the upper slopes a very large number of self-sown mhowra seedlings are to be seen. The old teak stools too which till a few years back, when a proper system of conservancy was introduced, had been suppressed by fires and the axes and koitas of the neighbouring villagers, are now throwing up vigorous shoots and fast developing into seed-bearing trees and are thus assisting in the work of reboisement. In fact throughout this range of hills the reappearance of teak among other vegetation is most marked. I have inspected these forests regularly now for the last four or five years, and each year I notice an improvement. The closed portion of the Ilton forests through which I also walked is situated on the upper slope of the hills, and contains a very promising growth of teak coppice, which in a few years will be bearing seed and assisting in the work of reboisement. The pátil of the village, an oldish man, who met me on the Rabale boundary, tells me that his grandfather, who died a few years ago, had told him that these forests were at one time very well stocked with teak and other timber, but that owing to reckless cutting for the supply of Bombay market they were quite destroyed and reduced to their present barren condition. The reappearance of the teak, khair and other woods quite bears out the story, and all we now require to re-stock these forests again is good fire protection, plentiful broad-casting of mixed seeds and strict exclusion of cattle from the closed portions."

124. In the Deccan divisions of the Northern Circle, natural reproduction from coppice shoots and seeds was good generally, but the scanty rain-fall was not so favorable to germination and growth as in a year of a "seasonable rainfall." The Divisional Forest Officer, Poona, reports that he has seen many reserves where the natural reproduction was most satisfactory, and he has also seen large areas where reproduction was certainly at a standstill, even if denudation was not going on steadily. This is owing to the free grazing of cattle on fixed areas without any restriction as to season, and without limitation of numbers of cattle according to the grazing capabilities of the different forest areas.

125. The cutting of thorns by villagers on payment of fees not only retards reboisement but also promotes denudation. The practice is an unmitigated evil, and an unnecessary evil. Thorns bind the little soil remaining upon the hillsides, they create new soil, they provide cover and shade, they break the dropping force of rain, they check the surface off flow of water, they absorb a quantity and convey it under ground, and they nurse and protect seedlings. To fence an ordinary sized field with thorns causes the stripping of wide stretches of hill side with the exposure of its surface, while the thorns dry, rot, are blown away or taken for fuel purposes before the crop they were intended to protect has been harvested; cultivators do not fence all their fields, and they certainly could get no thorns from the hill sides when the latter were quite bare of vegetation, so custom cannot be urged as an excuse to continue a practice, which is harmful in the

extreme to reboisement, and indeed to agriculture, for it retards the rehabilitation of the natural reservoirs of the country. The cutting of thorns should be strictly forbidden upon the semi-denuded forest hill sides of the Deccan, and no permission to cut thorns or other vegetation within the reserved forests should be given by any authority save of the responsible Forest officers, for if Forestry is a technical and scientific profession, its principles must be observed, and the removal of vegetation, however inferior it may be considered to be, to the prejudice of forest conservancy, to the sacrifice of reboisement, and to the promotion of denudation, should be avoided. In the Gujarát Forest divisions of Surat and Panch Mahâls, reproduction has been as satisfactory as forest fires and cattle will allow; fire and grazing prevent the results being as apparent as they should be. Seedlings which escape fire and drought during the first few months after the monsoon often survive only to be finally disposed of by half-starved cattle at the commencement of hot weather.

126. In the Eastern Deccan ranges which were the centres of famine during 1877-78, and where the rainfall is generally uncertain and often deficient, the increase of game, deer especially, is safe evidence of the growth of cover, showing that the reboisement of denuded lands, which have been constituted reserved forests since the famine year, is fast becoming an accomplished fact. These reserves are visited constantly by professional poachers with their nets and snares and other devices for trapping and destroying game, otherwise the increase of game would have been much greater. The desirability of a few simple game laws, under which a close season could be enforced at the times when animals and game-birds produce their young, and under which sanctuaries also could be established, where traps and snares would be unknown, and the pot-hunter's presence would not be seen, is great, not only in the interests of the preservation of game, a source of food-supply, and of industries, but in the interests of reboisement also, for the damage that a band of Wâghris with their nets to catch hares do to the young growth in a forest has to be seen before it can be believed.

8.—ARTIFICIAL REPRODUCTION.

127. In the North Thâna Division, of 127 khandis 9 maunds 2 sers of mixed seeds of all kinds some were broad-casted, and some were sown in prepared ground, and 30,818 seedlings obtained from neighbouring forests were transplanted over the several compartments, which had been coupes of the past season, and in other blank parts of the forests. Rhizomes of bámbus were brought from distant bámbu forest and planted in forests from whence the bámbu had been exterminated. In the South Thâna Division 96 khandis of seeds of different kinds collected by beat-guards were sown broad-cast, over coupes and compartments, and plantations were made in some of the recently occupied lands which had been acquired for forest conservancy upon the catchment of the Tánsa Lake, the seeds being sown in pits prepared for their reception. Germination was successful, but in spite of the precautions taken the whole area was subsequently traversed by fire and the young seedlings were burnt to the ground. The cart road from the Tánsa works to the Atgaon Railway Station forms the boundary of the plantation, and the traffic is heavy and constant, and some cartman or wayfarer threw fire carelessly into the grass, and the whole area was soon in a blaze.

128. In the two Khándesh Divisions the usual systems of plantations, *viz.*, of ploughing, dibbling and broad-casting, were resorted to, but the results were not satisfactory, owing to scanty rainfall. In the Násik Division the plantations in Niphád, Yeola, Málegaon, Dindori, Násik and Igatpuri ranges were thriving notwithstanding the drought. In the Ahmednagar Division 20,903 acres were treated, some of the seeds being deposited in pits and some broad-casted with 152 khandis of mixed seeds. In the Poona Division 182 khandis of different kinds of seeds were sown.

129. In the divisions of Sátára, Sholápur, Surat and Panch Mahâls, although plantation operations were undertaken as usual, still owing to scanty rainfall marked progress under this head cannot be recorded.

130. The following statement gives the details of the works of artificial reproduction undertaken during the year, with total cost incurred thereon, in all the divisions of the Northern Circle:—

No.	Division.	Regular Plantations. Area in Acres. On 1st April 1888.	Added.	Excluded.	On 31st March 1889.	Cultural operation. Area in Acres. On 1st April 1888.	Added.	Excluded.	On 31st March 1889.	Total Cost. Rs.	a.	p.
1	North Thána ...	2,209	...	...	2,209	430	5,487	...	5,917	1,172	15	3
2	South Thána ...	315	152	...	467	2,553	1,461	...	4,014	679	13	7
3	East Khándesh ...	...	10	...	10	11,695	437	...	12,132	263	14	2
4	West Khándesh ...	...	38	...	38	18,837	623	...	19,460	279	1	1
5	Násik	...	...	...	...	4,060	987	100	4,947	2,740	12	2
6	Ahmednagar ...	142	...	...	142	6,513	911	...	7,424	884	1	1
7	Poona	...	...	...	...	32,681	1,986	...	34,667	1,332	12	2
8	Sátára	1,957	614	...	2,571	65,742	20,009	...	85,751	859	10	11
9	Sholápur	...	...	...	...	11,804	10,641	...	22,445	1,806	1	11
10	Surat	...	...	...	...	2,615 5 miles.	17	1,715 5 miles.	917	11	0	0
11	Panch Maháls ...	...	26	...	26	148	140	...	288	127	2	7
	Total ...	4,623	840	...	5,463	157,078 5 miles.	42,699	1,815 5 miles.	197,962	10,177	4	11

131. In his excellent review of the Forest Administration Report of the North Circle for 1887-88, the Commissioner, C. D., called attention to the thick luxuriant growth of bábul on the slopes of the embankments of the Southern Marátha Railway, which are entirely unprotected, and compared it with some bare tracts of forest land adjoining, and suggested that plots should be dug up and fenced all over these tracts, and should be sown with bábul seeds. In reference to this recommendation, it must be explained that the embankments are made of earth heaped up, and consequently there is a rich deep soil, comparatively loose, into which the tap and other roots, of the recently germinated bábul seedlings, penetrate deeply at once, and the plants become established, and from their position are removed out of danger of harm or destruction from cattle. The case of the bare forest lands is very widely different; here, there is generally no soil, and where there may be a little, it is of no depth, and the surface is caked by sun and weather to the consistency of rock, for generations of cattle have constantly roamed, but not fattened, over these gáiráns. There is no earth to excavate, for moorum and rock where they do not crop up to the surface, are only an inch or two below, the root stocks of grass have been pulled out by the teeth of sheep and goats. The process of the formation of soil by the disintegration of rock under the action of the sun and rain and the working of the roots of grasses and the humblest vegetation was pointed out to the members of Forest Commission in the Bambhurdhe Reserve. Reboisement is necessarily a slow proceeding in such conditions, but it is sure and goes on steadily when the land is protected against cattle, the axe and fire. Nature is the great agent for the reafforestation of the wide stretching denuded areas in the Deccan, and although she can be assisted by forest subordinates, she cannot be relieved entirely of her work, except at so great an expenditure as to render the usurpation utterly unprofitable, and then only can artificial production of superior vegetation be fitful and extend over very limited areas. The scouring force of the rainfall is very powerful so that if soil is dug up and has no vegetation to protect it, and is not heaped up and consolidated into embankments, the slopes being guarded by a facing of stones, the soil will be washed away. Some idea of the denudation existing and to be overcome and the consequent volume of the surface off-flowing rainfall may be realised by the facts stated by the Divisional Forest Officer, Poona. The water consumption of the city of Poona with the Cantonments of Poona and Kirkee and the demands of the irrigation of the Bhimthadi reduce the depth of the Fife Lake 1 foot in about 10 days, but 55 to 60 hours of rain at the commencement of the rains suffices to replenish the lake filling up the 25 feet expended during year. The Commissioner, Northern Division, in his critical

remarks upon the forest administration of last year observes that too much economy appears to be practised in artificial reproduction. "In Madras, last year, the sum of Rs. 65,000, being 5 per cent. of the total forest revenue, was expended on plantations," and judging from what he had seen, Mr. Sheppard was of opinion that the expenditure is likely to be largely remunerative. Mr. Sheppard had visited the Nilgheri hills and had seen the fine plantations of Australian and other exotic trees which have been so successfully established there. In this Presidency there is nothing of the kind, for the simple reason that situation, climate and soil do not offer. But at the same time it must not be forgotten that the forests of Mahábaleshvar yield a considerable revenue from hirdas, firewood, &c., &c. No doubt expenditure carefully incurred upon plantations in a country devoid of coal deposits and where timber and fuel are scarce, will be profitable, provided always that the climate and other local conditions are favourable. But in the Deccan, the region of a light and capricious rainfall, a great deal of money can easily be expended with very little advantage resulting. It would be a very bad policy to expend 5 per cent. of the forest revenue of the Northern Circle, in sowing seeds and planting out seedlings, which will never grow into trees, and in endeavouring to anticipate Nature. Where money can be wisely spent upon plantations, the Forest officers will ever be ready to urge such expenditure. Much work still remains to be undertaken in providing enclosures round the forest reservations to keep out cattle, and to secure the young trees against destruction, not in growing living hedges which are rarely or ever constant and continuous, for breaks occur where the soil is poor, where there are stretches of rock, where the hedge is damaged wilfully or by accident, and which also at their best take years to become protective, but in erecting wire-fencing, &c., which will give to cultural operations such immediate protection as is necessary to successful reproduction. In the bábul reserves of the champaign country of the Deccan every coupe is at present fenced in, as soon as the timber &c., has been exploited, with the branches and thorns of the felled trees, the soil is dug up and the whole surface is sown profusely with seeds which are then covered over, but it is found that the hedging dries and rots, and is blown away, cattle charge through it and make gaps, and the protection thus afforded is not sufficiently lasting. In the forcing climate of the Konkan and of Gujarát such elaborate measures are not necessary, the roots of the exploited timber in the ground must not be disturbed, for they throw up shoots before the rains commence as soon as the sap begins to ascend, and the seeds naturally shed in past years germinate under the new conditions of light and air; where there may be blank spaces devoid of superior vegetation, the forest guards dibble in seeds, and they broad-cast the coupes to supplement the natural distribution of seeds over the surface. So that every coupe of the season becomes virtually a plantation of the rains.

132. There is another point to be remembered in connection with artificial and natural reproduction upon forest lands in this Circle, *viz.*, that grazing and the grass supply are very important considerations, cattle have of necessity to be admitted into forest areas from which they should, if Forestry alone were to be considered, be rigidly excluded for a long term of years. And therefore reafforestation has considerable disadvantages and obstructions to contend against and to overcome, and its course like the course of "true love" does not always run smoothly.

9.—EARLY THINNINGS, REMOVAL OF INFERIOR SPECIES, CUTTING OF CREEPERS, &c.

133. There is nothing of importance to record under these heads. The eradication of prickly pear from reserved forests was carried on by Forest guards and by hired labour in the Poona, Sátára and Sholápur Forest Divisions, where Rs. 293, 56 and 653 respectively were spent upon the operation. Forest guards were made to cut creepers, and to remove other inferior growth which required to be removed, in the forests of their several beats, and no special expenditure was incurred in such works of improvement.

10.—EXPERIMENTS WITH EXOTIC TREES.

134. The Divisional Forest Officer, Ahmednagar, reports that the exotics planted in nurseries in previous years are doing fairly well, and the Divisional

Forest Officer, Násik, states that the Mahogany plants, reported on last year as being 2½ feet high, are still thriving and have attained a height of about 6 feet.

135. An experimental sowing of seeds of the date-palm was made throughout the Circle in all divisions. Some seeds were kindly supplied by the Director of Agriculture, but larger quantities were purchased in the Bombay bazaar to which Bussorah dates come from the Persian Gulf. The steamers and country craft conveying Arab and Persian horses to the Bombay market invariably have cargoes of dates on board. Dates are used in Persia and in Arabia also to feed horses and dogs; grey-hounds, which both Arabs and Persians delight to keep for coursing, are fed largely upon dates. And purchases of date seeds were also made in local bazaars in the mofussil. Nurseries were established in almost every range in each division, in places where there is command of water, and date seeds were sown in ground prepared according to prescribed directions. But the results have not been favourable generally. Germination is reported to have been poor; this is attributed to many of the seeds not being sound and having lost their vitality. Selected date seeds, which were sown in pots, and which received great attention and care, have done better, and the Divisional Forest Officer, Násik, reports that every seed thus sown in his own garden germinated, and the seedlings at the end of the year were one foot high, and there has not been one casualty among them. The Divisional Forest Officer of Sátára reports that there were 689 young date-trees surviving in the nurseries of his ranges at the close of the year. The Divisional Forest Officer, Panch Maháls, reports that germination was indifferent, that the plants were not strong and healthy, that many succumbed to the hot weather, and that about 24 were living at the end of March, and these were about 4 inches high. It is obviously too soon to look for any great result when the experiment is only six months old, no doubt many of the seeds which have not germinated will do so during the rains of 1889. The Conservator visited several of the nurseries of the date-palm in different ranges of the South and North Thána, the Násik and other divisions during his tour and he found young plants in all of them.

11.—COMMUNICATIONS AND BUILDINGS.

(*a*)—Roads and Bridges.

136. No new projects for roads were submitted by the Forest Department, and no constructions were undertaken by Forest officers, and no great expenditure was made directly from forest funds during the year, but existing roads and communications, which serve for the transport of timber and other forest produce from the forests to markets, have been improved and extended in all divisions by the Public Works Department, and several new roads have been laid out, and considerable progress made upon them, at the cost of the Provincial Services Budget, towards which the Forest Department contributes a considerable sum annually. In the Thána divisions Rs. 7,718 were expended during the year by the Public Works Department upon the Dáhánu and Jowhár road, which up to date has cost Rs. 1,62,587. This road passes through the centre of a forest country, the southern portion of the Dáhánu Range, to Jowhár, the capital of the Native State of the same name, and it connects several rich and widely stretching forests of the Dáhánu Range to Sawte Bandar, and to the Dáhánu Station on the B. B. and C. I. Railway, thus providing these forests with water and railway carriage. The Shirghát-Paruli road, which was under construction last year in the South Thána Division, has made considerable progress during the year, Rs. 33,175 having been expended upon it, but it is not yet available for timber traffic though a section of it has facilitated the exploitation of timber, &c., from one of the coupes in the Mokháda Range. The road from Bhiwndi to Váda, which is used by timber traffic, has been metalled, and the ford of the Tánsa river has been paved, the expenditure of the year amounting to Rs. 8,931. Of the road from the Chahad Khind to Manor, essentially a timber road, 2 miles were opened to traffic in November 1888, and the earth-work up to Manor has been completed, and 14 drains and culverts constructed at an expenditure of Rs. 9.844 in the year.

137. In the Khándesh Collectorate the following works, which will open out forests and promote the circulation of timber, &c., in trade, occupied attention during the year :—

1. Enquiry was resumed as to improving communication across the Syhádri range with the Dángs so as to connect these valuable forests to the markets of Khándesh above the ghâts.

2. Plans and estimates have been sanctioned for improving the Sakri-Ghorda portion of the Dhulia and Surat road and a survey of the Ghorda-Kondaibari road, the main traffic on which is timber and grass.

3. The Dhulia-Nandurbár road branching from the Bombay-Agra road at Songir, was advanced a stage.

4. The Dhulia-Sháháda road was also advanced a stage. Extension to Taloda and thence through the Raisingpur State to the Ankleshvar station of the B. B. and C. I. Railway has been partly surveyed. This road will serve the rich timber forests of the Taloda plains.

Several other roads, which greatly, if not chiefly, promote forest interests, were repaired, metalled or completed by the Executive Engineer, Khándesh, during the year.

138. Additions for Range Forest Officers' offices, were made to the Mámlatdár's Kacheri at Bhusával, and the Mahálkári's Kacheri at Bhadgaon. The new Kácheries completed or in progress at Sakri, Sháháda, Jámner, Navápur contain accommodation for the Range Forest Offices, and plans and estimates were preparing for providing offices at Taloda, Sindkheda and Shirpur and also in the proposed new Kacheries at Dhulia and Erandol.

139. The projected line of Railway starting from the Manmád junction upon the G. I. P. Railway line and travelling by way of Dhulia and Nandurbár to Surat, which has been reconsidered during the year, will, if constructed, develop the trade in timber and will give additional value to forest reservations in parts of Khándesh, and even in the Dángs, and will no doubt augment the forest revenues.

140. In the Násik Division :—

1. The Násik-Dindori and Kalvan road is now quite passable without hindrance from end to end, Rs. 9,629 having been expended upon it during the year and is used largely by timber carts.

2. A further portion of the Goldari and Ozar road in the Peint Range, which will serve teak and bámbu forests in the Harsul sub-range was undertaken.

3. While in the north of the Peint forest country the construction of the Hasteh and Barhe road was pushed on.

141. In the Ahmednagar Division the building of Forest depôt-houses for storing hirda nuts and accommodating Forest Guards, was commenced at Phopsandi, Ghátghar, Shinganvadi, Pálé, Shirpunje and Koltémbhé.

142. In the Poona Division the construction of a road from Ghodá to Ámbegaon was undertaken by the Public Works Department. This road will connect Ghodá, the chief town in the A'mbegaon Range, with A'mbegaon, 11 miles distant, and will be located in the upper reaches of the valley of the Ghoda river, where the latter flows from the ghâts, and will open out teak and mixed forests in the valley and in the neighbourhood of the source of this river. The importance of this road can scarely be exaggerated, as this part of the country, which has a large trade in Hirda and forest produce, is almost wholly devoid of communications.

143. In the Panch Mahâls Division the Godhrá to Sherá road, which is largely used by the timber trade, was improved; and an office was built for the Range Forest Officer at Dohad. Provision is likewise being made for the accommodation of the Range Forest Office in the Kacheries at Hálol and Kapadvanj now under construction.

144. It will be seen from the above list that the forest interests are benefitting largely from the contribution the forest revenues give to the Provincial Services Budget, and that communications calculated to augment the forest wealth, and at the same time to do good generally to the country at large, are being constantly evolved with great foresight, and are being constructed under skilful professional direction and control.

145. The expenditure incurred from the Forest Budget sanctions during the year under "Roads and Bridges", the works being directed and supervised by Forest officers, amounted to Rs. 739-0-1, and is distributed thus :—

Rs.	a.	p.	
48	9	0	On repairs to the Jawli-Baleshwar road in the Ahmednagar Division.
96	3	6	On repairs to the road from Chachegaon in Karád to Kalgaon in Pátan in the Sátára Division to facilitate the extraction of the teak timber cut in the forests of that neighbourhood.
594	3	7	In the Surat Division on repairs to the road from Bánsda to Dhunda in the Dángs, together with its bridges.
739	0	1	

146. Although the introduction of portable tramways and other agencies, such as artificial water-carriage for the conveyance of timber from forests in rough and inaccessible parts of the country to markets has been under consideration, and although it is possible that a tramway might serve in a high degree the forests of a part of the Dáhánu Range, and of the Talasri Máhál, and it is probable that a tramway might be of great use in the Dangs to bring timber, &c., to the coast markets; and although the improvement of the existing water-carriage, and the excavation of a canal, where the water porterage is now defective, might open out the Syhádri forests to the Southern Marátha Railway, for the supply of fuel, the Conservator apprehends that the time has not yet arrived when expenditure upon tramways and water-carriage can be recommended with the certainty of financial advantage in the immediate future, for the Working Plans Division has not yet made sufficient advance, and forest organization and constitution is still very backward, and the forests are also still young.

(*b*)—Buildings.

147. Buildings to serve as offices for Range Forest Officers have been constructed by the Public Works Department in connection with some Táluka Kacheries in districts, where such accommodation was wanting and no new works of importance except the construction of Forest guards' huts, and repairs to Forest stations and posts were undertaken by Divisional Forest officers at the cost of Forest Budget.

148. The following statement will show the expenditure incurred under his head in the different divisions of the Northern Circle :—

No.	Division.	Amount.
1	North Thána	678 14 0
2	South Thána	411 5 6
3	East Khándesh...	291 11 0
4	West Khándesh	893 4 5
5	Násik	3 0 0
6	Ahmednagar	1 0 0
7	Sátára	95 6 0
8	Surat	440 2 2
9	Panch Mahála	252 1 6
	Total ...	3,066 12 7

CHAPTER IV.

YIELD AND WORKING.

I.—DEPARTMENTAL OPERATIONS.

TIMBER AND FIREWOOD.

149. The results of timber and firewood operations of the North Thána division are given in the following table :—

No.	Range.	Number of Coupes.	Area.	Yield.		Cost.			Receipts.			Remarks.
				Timber.	Firewood.							
			Acres.	Pieces.	Cart-loads.	Rs.	a.	p.	Rs.	a.	p.	
1	Sálsette ...	1	31	1,645	892	642	0	9	1,337	0	0	
2	Bassein ...	5	232	7,941	6,483	2,792	10	9	12,656	1	6	
3	Máhím ...	3	133	8,810	615	955	7	3	3,389	4	0	
4	Umbargaon ...	4	183	4,152	1,396	1,086	6	6	5,216	14	0	
	Total ...	13	579	22,548	9,386	5,476	9	3	22,599	3	6	

150. Of the above material 841 cart-loads of firewood were sold on permits to villagers for household consumption, and the following quantities of material were sold by retail auction in small lots to meet the requirements of the local population; but the competition at the sales was very feeble and the demand was so small that all the remaining material had to be sold to dealers for trade purposes :—

No.	Range.	Timber.	Receipts.			Remarks.
		Pieces.	Rs.	a.	p.	
1	Sálsette	1,645	1,337	0	0	
2	Bassein	7,584	5,340	8	0	
3	Máhím	1,074	725	4	0	
4	Umbargaon	2,238	3,324	6	0	
	Total ...	12,541	10,727	2	0	

151. The attendance and demand generally for material at the retail auction sales have greatly fallen off during the year. This is due to the very large increase in the number of contract fellings, *i. e.* sales of standing timber and firewood by compartments, to contractors, to which villagers now prefer to go for their wants in timber and other forest produce. It will thus be seen that private enterprise has established a local timber trade which can satisfy and is satisfying all the requirements of local supply, and that the intervention of the Forest Department in the retail wood trade is as unnecessary as it is contrary to the principles of healthy administration.

152. Under Government Resolution No. 7418, dated 8th November 1888, in the Revenue Department, no special arrangements were made to supply the sugar-boilers with firewood, it being decided that these people should provide themselves with firewood from the contractors, who have vast quantities of firewood in their compartments and are ready to sell to all comers, not only for cash payments as the Forest Department must necessarily do in their sales, but also on the credit system.

South Thána Division.

153. Departmental fellings were made on a very limited scale. It had been decided that the coupes which remained unsold at the annual auctions should be cut departmentally; but fortunately very few coupes, except in the Bhiwndi range, remained unsold.

154. The following statement gives the result of the year's operations, the number of trees in the coupes being 4,000 :—

No.	Range.	Number of Coupes.	Acreage.	Cost of felling.	Price realised.	Net profits.
				Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Bhiwndi	5	188	1,949 9 10	5,058 4 0	3,108 10 2
2	Kalyán	1	32	157 8 1	508 0 0	350 7 11
3	Khálápur	1	40	291 6 5	750 0 0	458 9 7
	Total ...	7	260	2,398 8 4	6,316 4 0	3,917 11 8

155. In addition to these coupes 2,000 teak trees were cut departmentally in the Karjat range at a cost of Rs. 365-15-0, and the sale-proceeds amounted to Rs. 3,487-2-0, leaving a net profit of Rs. 3,121-3-0; the loppings of these trees produced 2,640 khandis of firewood.

East Khándesh Division.

156. The following statement shows the quantity of different kinds of material cut departmentally :—

No.	Range.	Bábul Logs.	Rafters.		Fuel, Khandis.		Remarks.
			Anjan.	Teak.	Anjan.	Bábul.	
1	Bhusával	500	...	...	...	2,175	
2	Chálisgaon	...	...	...	*1,550	...	*Mixed fuel.
3	Chopda	...	...	5,000	440	...	
4	Edalabad	...	...	...	...	3,000	
5	Jalgaon	...	...	...	...	115	
6	Jámner	...	...	15,000	...	245	
7	Ráver	...	2,500	...	1,000	...	
8	Sávda	...	...	...	1,000	...	
	Total ...	500	2,500	20,000	3,990	5,535	

And the cost and receipts of these operations are as under :—

No.	Range.	Cost.	Receipts.	Net Revenue.
		Rs.	Rs.	Rs.
1	Bhusával	748	3,044	2,296
2	Chálisgaon	319	1,500	1,181
3	Chopda	313	2,527	2,214
4	Edalabad	938	3,100	2,162
5	Jalgaon	33	205	172
6	Jámner	582	5,394	4,812
7	Ráver	398	1,140	742
8	Sávda	312	900	588
	Total ...	3,643	17,810	14,167

West Khándesh Division.

157. The departmental operations of the year consisted in cutting teak, khair, anjan and bábul trees, which were subsequently converted into timber pieces or fuel according to the quality of the wood. The following statement will give the details of teak fellings :—

No.	Range.	Number of Trees.	Converted into Pieces.	Cost.	Receipts.	Remarks.
			No.	Rs. a. p.	Rs. a. p.	
1	Nandurbár	9,700	13,000	300 0 0	3,377 0 0	
2	Navápur	3,700	20,000	704 9 0	2,425 0 0	6,200 pieces not sold.
3	Pimpalner	1,414	10,002	412 0 0	651 8 0	8,129 do.
4	Shirpur	10,772	17,755	480 0 0	6,147 1 0	
5	Sháháda	4,275	16,520	497 10 0	4,576 0 9	
6	Taloda	6,527	13,586	856 13 0	2,682 8 0	
	Total ...	36,388	90,863	3,251 0 0	19,859 1 9	

158. In addition to the above, 1,062 pieces of teak remaining unsold at the close of last year were sold for Rs. 60; and the realizations on account of timber cleared from forest boundary lines amounted to Rs. *320-6-0.*

159. The fuel operations consisted of khair, anjan and bábul, and the details are as under :—

No.	Range.	Number of Trees.	Cubic feet rough stack.	Cost.	Receipts.	Remarks.
				Rs. a. p.	Rs. a. p.	
1	Dhulia	23,106	294,100	1,473 7 6	1,590 0 0	230,100 cubic feet not sold.
2	Nizámpur	2,590	67,837	255 4 0	989 12 0	
3	Sindkheda	21	425	0 12 0	4 13 0	325 do. do.
	Total ...	25,717	362,362	1,729 7 6	2,584 9 0	

160. The Public Works Department bought 727 teak pieces for Rs. 416-12-0.

Násik Division.

161. The departmental operations in timber and firewood are given in the following table :—

No.	Range.	Teak Logs.	Firewood.			Cost.	Receipts.	Remarks.
			Khandis.	Logs.	Cubic feet.			
						Rs. a. p.	Rs. a. p.	
1	Násik	184	...	...	45,000	348 6 7	604 14 0	
2	Igatpuri	2,000	50	174	27,406	275 0 7	524 7 0	
3	Sinnar	812	20	...	...	208 5 8	295 0 6	
4	Niphád	...	...	..	4,680	52 10 8	156 5 0	
5	Chándvad	1,010	...	...	...	70 2 7	605 15 0	
6	Yeola	...	...	...	...	27 10 8	.....	
7	Nándgaon	...	...	...	54,000	277 10 7	800 8 0	
8	Málegaon	950*	...	...	48,726	248 3 10	908 13 0	*Anjan logs.
9	Kalvan	8,540	50	...	4,860	309 14 10	2,462 0 0	
10	Báglán	2,349	100	...	...	130 2 10	693 5 0	
11	Peint	4,196	...	...	...	391 7 2	17,728 11 0	These amounts include the realizations from timber remaining on hand from last year.
12	Dindori...	10,172	592	...	...	398 15 6	5,268 10 11	
	Total ...	30,213	812	174	1,84,672	2,738 11 6	30,048 8 11	

Ahmednagar Division.

162. The following is a statement of felling operations :—

No.	Range.	Number of Trees.	Yield. Timber Rafters.	Yield. Firewood.	Cost.	Receipts.	Remarks.
	Teak.			C. ft.	Rs. a. p.	Rs. a. p.	
1	Akola	11,244	30,169	14,698	666 0 0	3,865 2 11	The firewood shown consists of loppings, &c., of the trees cut.
2	Sangamner	7,974	20,077	6,301	483 7 6	3,024 8 9	
	Total ..	19,218	50,246	20,999	1,149 7 6	6,889 11 8	
	Jámbul.						
1	Akola	2,571	10,074	7,186	189 13 6	238 10 0	
2	Sangamner	1,064	5,040	5,125	99 9 0	353 3 6	
	Total ...	3,635	15,114	12,311	289 6 6	591 13 6	

In addition to the above, 41,029 cubic feet of firewood were cut at a cost of Rs. 203-10-0 in Shrigonda, Shevgaon, Nevása, Kopargaon and Sangamner ranges, and the sale-proceeds amounted to Rs. 1,123-13-0.

Poona Division.

163. The material worked out departmentally is as under :—

No.	Range.	Number of Teak Trees.	Yield. Pieces.	Yield. Firewood.	Cost.	Receipts.	Remarks.
				C. ft.	Rs.	Rs.	
1	Junnar	5,148	12,376	1,400			
2	Ambegaon	19,000	33,995	13,000			
3	Khed	12,289	48,094	8,000	2,935	27,699	
4	Mával	1,132	1,739	262			
5	Haveli	10,351	20,850	34,500			
6	Purandhar	8,000	19,294	6,300			
	Total ...	46,920	136,348	62,462	2,935	27,699	

164. The following statement will give the details of firewood operations :—

No.	Range.	Number of Trees.	Material. Logs.	Material. Stacks.	Cost.	Receipts.	Remarks.
			Cubic feet.	Cubic feet.	Rs.	Rs.	
1	Junnar	77	1,664	2,964	37	339	
2	Haveli	503	7,085	13,585	288	2,792	
3	Bhimthadi ...	7,964	42,989	85,211	1,106	4,667	
4	Bárámati ...	6,175	1,601	18,813	235	757	
5	Sirúr	8,581	6,607	50,127	764	2,385	
	Total ...	23,300	59,946	170,700	2,430	10,940	

Sátára Division.

165. The following statement exhibits the departmental operations in teak, including teak trees in occupied survey numbers the occupants of which declined to purchase the trees at the valuation rates :—

No.	Range.	Yield in Pieces.	Cost.	Receipts.
			Rs. a. p.	Rs. a. p.
1	Jávli	3,062	83 5 0	254 0 0
2	Karád	5,635	190 15 0	2,095 0 0
3	Koregaon	2,783	80 1 0	847 0 0
4	Pátan	18,811	745 2 9	6,793 0 0
5	Sátára	7,431	162 8 0	1,036 0 0
6	Shirála	11,603	291 5 0	3,200 0 0
7	Wái	3,069	89 15 6	1,000 0 0
	Total ...	52,394	1,643 4 3	15,225 0 0

The junglewood pieces cut in addition are as under :—

No.	Range.	Pieces.	Cost.	Receipts.	Remarks.
			Rs. a. p.	Rs. a. p.	
1	Mahábaleshvar ...	*4,563	149 13 8	358 13 5	*610 pieces remained unsold at the end of the year.
2	Pátan	2,900	154 13 6	438 12 0	
3	Tásgaon	318	89 7 0	423 11 0	
	Total ...	7,781	394 2 2	1,221 4 5	

166. The firewood fellings were as under, including loppings from teak fellings :—

No.	Range.	Cubic feet.	Cost.	Receipts.
			Rs. a. p.	Rs. a. p.
1	Koregaon	1,096	.....	31 5 0
2	Karád	13,342	69 15 0	218 9 6
3	Khandála	2,250	20 13 0	59 14 3
4	Mahábaleshvar	74,396	1,209 15 6	1,946 8 0
5	Pátan	33,000	226 10 9	789 7 0
6	Sátára	12,408	125 8 0	257 11 0
7	Shirála	6,188	22 13 0	79 10 0
8	Tásgaon	17,010	.....	184 4 0
9	Wái	14,715	93 1 0	334 8 0
	Total ...	174,405	1,768 12 3	3,901 12 9

436 khandis and 14 maunds remained unsold in the Malcolmpeth Depôt at the close of the year.

167. No charcoal operations were undertaken departmentally, as the results of the previous years were not encouraging.

Sholápur Division.

168. There are no teak fellings in this division, but 1,352 cubic feet of bábul and nimb timber were cut at a cost of Rs. 15 in the Sholápur and Pandharpur ranges and sold for Rs. 173-4-0.

169. Firewood operations were undertaken in the Sholápur, Bársi, Mádha, Karmála and Pandharpur ranges, and 18,172 cubic feet of firewood were cut at a cost of Rs. 144-8-9 and sold for Rs. 1,134-0-6, leaving 1,454 cubic feet unsold on hand at the close of the year.

Surat Division.

170. The departmental fellings in this division are as under :—

No.	Range.	Yield. Rafters.	Kh.	Ft.	In.	P.	Cost. Rs. a. p.	Receipts. Rs. a. p.	Remarks.
1	Dángs... ...	...	2,272	1	1	10	2,840 1 8	22,713 14 11	..
			1,174	10	2	7			
2	Mándvi ...	2,976	...	...	...	...	588 8 1	*18,244 12 3	*This amount includes the sale-proceeds of 49,87f rafters from last year.
				Total	...		3,428 9 9	40,958 11 2	

Panch Maháls Division.

171. The following statement gives the details of departmental operations undertaken in this division :—

No.	Range.	Yield. Teak Rafters.	Firewood.	Cost. Rs. a. p.	Receipts. Rs. a. p.	Remarks.
			C. ft.			
1	Godhra	27,839	114,762	578 14 10	704 0 0	
2	Hálol	3,969	...	125 1 1	648 10 0	
3	Kálol	...	71,424	376 0 9	.....	
	Total ...	31,808	186,186	1,080 0 8	1,352 10 0	

172. Of the above material 12,263 rafters of the value of Rs. 724-2-7 were handed over from the Godhra Depôt to the Revenue Department as per Government Resolution No. 3404, dated 28th May 1888, as free grants to the villagers of Kuha in the Daskroi Táluka of the Ahmedabad Collectorate and the remaining material at the Godhra Depôt was supplied to the sufferers by the Godhra fire, as per Government Resolution No. 2952, dated 17th April 1889.

BÁMBUS.

173. In the Sátára Division bámbus were cut departmentally last year ; but this year no departmental operations were undertaken anywhere, as the sale results of previous years were not satisfactory ; for unless bámbus are disposed of speedily they deteriorate, and it is difficult to find purchasers for them.

OTHER MINOR PRODUCE.

North Thána Division.

174. The special departmental arrangements for cutting and preparing ain bark to meet the requirements of the Koli fishermen have been discontinued, as larger quantities of bark than this Department used to exploit formerly

are now obtainable from the contractors, who purchase timber standing in compartments which contain many ain trees, and who bring the bark to the coast towns and villages for sale.

175. The hirda in the Kewnala forests of the Váda range, which has hitherto been collected with the Mokháda hirda and sold to the credit of the South Thána division accounts, was departmentally collected, sold and its price credited to the North Thána division during the year with the following result:—

Quantity.	Cost.	Receipts.	Net Result.	Rate per Khandi.	Remarks.
Kh. m. s.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
*108 26 13	679 14 10	1,727 6 6	1,047 7 8	16 0 0	*Out of this one khandi hirda was retained for sowing purposes.

South Thána Division.

176. The only departmental operation under this sub-head was the collection of hirda. The fruit is collected in the forests by the Thákurs and other wild tribes and brought to depôts, where it is weighed and paid for by depôt officers appointed for this duty. The hirda crop during the year was exceptionally good; there was an increase of 61 khandis over the quantity of last year. The following statement will give the details of the operation:—

Number.	Range.	Quantity.	Cost.	Receipts.
		Kh. m. s.	Rs. a. p.	Rs. a. p.
1	Mokháda	158 18 2	968 0 0	2,637 8 4
2	Khardi	85 6 12	692 11 8	1,417 3 3
3	Sháhápur	13 0 6	85 8 4	216 6 1
4	Kalyán	5 11 12	33 0 0	90 2 8
5	Karjat	2 21 10	44 0 0	45 11 6
	Total ...	265 3 0	1,823 4 0	4,406 15 10

West Khándesh Division.

177. 58 cart-loads of leaves of the anjan tree, *Hardwickia binata*, collected at the departmental fellings in Dhulia range were sold for Rs. 10, and 31 bundles of teak leaves collected at Pimpalner remained unsold at the close of the year.

Násik Division.

178. No departmental collection of hirda was undertaken in this division, but it was collected under a share system, 51 khandis, 3 maunds and 9 sers were thus received in the Igatpuri and Násik ranges, but it all remained unsold at the close of the year owing to very unsatisfactory offers which had been made for it.

Ahmednagar Division.

179. 340 Bombay khandis, 4 maunds and 12 sers of hirda were departmentally collected and sold at Rs. 27-5-0 per Deshi khandi, giving a total revenue of Rs. 3,743-2-10. The cost of collection amounted to Rs. 2,258-9-3. The increased collection of hirda during the year is due to the unusually slight loss by high winds and rain at the commencement of the season; and it is hoped that the system of roads now in course of construction or proposed, in the Akola ghâts, will in future facilitate the transport of this produce and thus enhance its value.

Poona Division.

180. The hirda revenue owing to increased collections shows a considerable advance over last year. The details of the operation are as under:—

No.	Range.	Quantity collected.	Cost.	Receipts.	Remarks.
		K. m.	Rs. a. p.	Rs. a. p.	
1	Junnar	10 4	.....	151 3 3	
2	Khed	19 5	.....	267 9 4	
3	Ambegaon	22 2	.....	378 13 1	
4	Mával	21 0	.....	226 9 3	
5	Mulshi	198 8	1,348 8 3	2,513 11 11	
	Total ...	271 9	1,348 8 3	3,537 14 10	

181. The share system of hirda collection was extended to Mával range this year, but it was found impossible to extend it to Mulshi. The yield has been unprecedented in Mulshi owing to special exertions on the part of the local forest establishment.

Sátára Division.

182. A departmental collection of hirda was undertaken in four ranges as remunerative prices for the right of collecting could be obtained only in the two ranges of Sátára and Wái. The departmental collections not only exceeded expectations, but the prices realised were also very good. 856 khandis 23 maunds and 10 seers were collected at a cost of Rs. 5,745, and the sale proceeds of 678 khandis out of the quantity amounted to Rs. 13,478.

183. The right of collection of shikakai, the pod of the *Acacia concinna*, was sold for Rs. 766, and the balance on hand from the previous year was also sold for Rs. 1,398-12-9.

Sholápur Division.

184. There were no departmental operations under this head in this division, but 8 khandis and 2 maunds of bábul bark stripped from the trees cut departmentally were sold for Rs. 16-2-6.

185. The following statement will show the results of hirda collection of the year under report and of the preceding year:—

No.	Division.	Yield.		Cost.		Receipts.	
		1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
		K. m. s.	K. m. s.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	North Thána	.....	108 26 13	.....	679 14 10	.....	1,727 6 6
2	South Thána	204 0 12	265 3 0	1,614 15 8	1,823 4 0	2,448 5 9	4,406 15 10
3	Násik	100 21 13	51 3 9	630 10 1	56 5 8	1,061 7 7	.....
4	Ahmednagar	170 3 6	340 4 12	1,144 4 0	2,258 9 3	2,500 12 10	3,743 2 10
5	Poona	142 9 6	271 25 3	556 11 9	1,348 8 3	2,336 14 1	3,537 14 10
6	Sátára	385 15 10	349 17 7	2,699 5 9	5,745 2 9	5,246 2 11	13,477 10 1
	Total ...	1,002 23 5	1,386 25 2	6,645 15 3	11,911 12 9	13,593 11 2	26,893 2 1

2.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS.

TIMBER AND FIREWOOD.

North Thána Division.

186. During the year 109 compartments which had been laid out on the ground by the Divisional Forest Officer Working Plans, and carefully defined by cairns and other boundary marks, and in which a careful selection of standards

and seed bearers for reservation had been made, were offered for sale, but only 86 of these were sold, the remaining 23 being kept back as the offers for them were too low.

187. The results of the sales are as under :—

No.	Range.	Number of Coupes.	Area of Coupes.	Yield.		Receipts.
				Timber.	Firewood.	
			Acres.	Pieces.	Khandis.	Rs.
1	Sálsette	3	71	2,682	558	1,866
2	Bassein	13	627	19,599	15,810	21,446
3	Máhím	30	1,299	66,272	36,996	38,003
4	Váda	8	389	48,628	2,290	18,611
5	Dáhánu	26	1,340	110,449	12,484	57,336
6	Umbargaon	6	244	13,121	7,991	10,334
	Total ...	86	3,970	260,751	76,129	147,596

188. Under the permit system which is still employed as a means of meeting the requirements of the local population, but which, it is hoped, will shortly be abandoned as the people have so many facilities for obtaining timber, firewood and other material from the contractors' fellings, the following sums were realised on account of dead-wood removed from the forests :—

No.	Range.	Head-loads at 9 pies, man 6 pies, woman 3 pies, child.	Large Carts at Re. 1 each.	Small Carts at 8 annas each.	Kowl Khandis at 6 annas each.	Total.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Sálsette ...	447 0 0	.....	13 0 0	.....	460 0 0
2	Bassein ...	16 0 0	1,309 0 0	102 0 0	516 0 0	1,943 0 0
3	Máhím ...	.....	.....	1,726 0 0	407 0 0	2,133 0 0
4	Dáhánu ...	.....	.....	1,650 0 0	.....	1,650 0 0
5	Umbargaon ...	.....	.....	172 0 0	.....	172 0 0
6	Váda ...	.....	.....	17 0 0	.....	17 0 0
	Total ...	463 0 0	1,309 0 0	3,680 0 0	923 0 0	6,375 0 0

South Thána Division.

189. The timber removed by purchasers realised on the whole very fair prices, and the sales were all effected early. These sales were of two kinds, one of coupes by area, and the other of teak trees marked for the axe. The following statements exhibit the results of such sales :—

Coupe sales.

No.	Range.	Number of Coupes.	Area.	Receipts.	Remarks.
			Acres.	Rs. a. p.	
1	Bhiwndi	11	497	16,162 0 0	
2	Kalyán	14	551	18,166 8 0	
3	Khálápur	2	104	1,981 0 0	
4	Sháhápur	2	179	3,831 0 0	
	Total ...	29	1,331	40,140 8 0	

Sales of Teak Trees.

No.	Range.	Number of Trees.	Prices realized.			Remarks.
			Rs.	a.	p	
1	Sháhápur	16,000	15,640	0	0	The average price per 100 trees was Rs. 95-8.
2	Khardi	8,000	7,516	0	0	
3	Mokháda	8,000	9,110	0	0	
4	Murbád	12,000	11,310	12	0	
5	Karjat	19,740	16,851	4	0	
6	Khálápur	8,000	8,081	0	0	
	Total ...	71,740	68,509	0	0	

190. The forest growth on the Tansa Lake bed was sold last year to Mr. Bhojabhai Allarakhé for Rs. 1,10,001, to be paid in ten quarterly instalments, and the four of these, amounting to Rs. 44,000, which became due, were punctually paid by him during the year, leaving three instalments still to come in.

191. In connection with the Tánsa Water-works, extensive sales of wood were made to different companies. 12,088 teak and 12,507 other trees were sold to Colonel Beaumont, and Messrs. Walsh, Lovett, Mitchel and Co., at a price of Rs. 11,569-4-0, and 1,959 teak and 5,190 other trees were sold to Messrs. Glover and Co. at a price of Rs. 3,364-8-0. Special coupes were marked, and set out for the contractors to fell and exploit all the unreserved timber from and the operations were conducted by them with care and consideration for the standards. The contractors of the Tánsa Lake and of the duct line have maintained excellent discipline over the thousands of workmen they employ, so that the forest reserves have not suffered at all in the neighbourhood of their works. Timely arrangements have been made to provide all probable requirements of timber and firewood, and cordial relations have been maintained between the contractors and the forest officers, and the officers of the Bombay Municipality, who have heartily co-operated with each other in carrying out a great public work, and at the same time in protecting, as far as possible, the interests of the contractors, of the Municipality, and of the State.

192. The quantity of firewood removed from the forests by consumers in cartloads and head-loads, on permits obtained by payment of fees, amounted to khandis 2,192, which realized Rs. 1,198-6-11.

193. In the two Khándesh divisions timber to the value of Rs. 18,166 and firewood worth Rs. 11,101 were removed by purchasers under the permit system. The following statement will give the realizations from timber and firewood in all the other divisions of the Northern Circle :—

No.	Division.	Realizations.			Remarks.
		Timber.	Firewood.	Total.	
		Rs.	Rs.	Rs.	
1	Násik	8,488	808	9,296	
2	Ahmednagar... ...	204	641	845	
3	Poona	130	1,673	1,803	
4	Sátára	2,805	.....	2,805	
5	Sholápur	290	.....	290	
6	Surat	35,429	2,284	37,713	
7	Panch Maháls ...	33,893	932	34,825	
	Total ...	81,239	6,338	87,577	

BA'MBUS.

194. In the North Thána division bámbus were removed by villagers for agricultural purposes on the permit system, and the following statement shows the details of amounts realized :—

No.	Range.	Padhai Bámbus @ Rs. 5 per 100.	Manvel Bámbus @ Rs. 3 per 100.	Bundhi Bámbus @ 8 annas per cart.	Zitas @ 3 annas per cart.	Karal @ 4 annas per cart.	Total.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	Sálsette ...	89	21	...	2	44	156
2	Bassein ...	579	316	643	232	303	2,073
3	Máhím ...	115	428	801	256	63	1,663
4	Dáhánu ...	412	236	416	103	11	1,178
5	Umbargaon .	4	22	79	46	23	174
6	Váda ...	80	28	139	7	...	254
	Total ..	1,279	1,051	2,078	646	444	5,498

In addition to the above, 3,00,000 manvel bámbus were sold, to meet the requirements of trade, for Rs. 6,560.

195. In the South Thána division 150,000 manvel bámbus were sold in the Mokháda range at Rs. 2 per 100, realizing Rs. 3,000, and other petty sales of bámbus to the extent of Rs. 544, make up the total realizations Rs. 3,544 in this division.

196. The following statement exhibits the realizations from bámbus in all the other divisions of the Northern Circle :—

No.	Division.	Bámbus in Numbers.	Amount realized.	Remarks.
			Rs. a. p.	
1	East Khándesh ...	No. 256,800 Head-loads 1,040	3,719 0 0	
2	West Khándesh ...	256,772	2,562 7 4	
3	Násik	No. 178,407 Cart-loads 91 Head-loads 831	3,824 9 9 106 8 0 56 15 0	
4	Ahmednagar ...	33,441	342 5 1	
5	Poona	169,849	1,753 0 0	
6	Sátára	18,357	114 6 0	
7	Surat	627,404	12,237 0 5	
8	Panch Mahás ...	162,123	1,986 0 6	

Other Minor Produce.

197. The following statement will show the realizations from minor produce, such as apta and tembhurni leaves, shembi bark, tarwad, honey, wax, fruits, stones, karvi, &c., removed from the forests by consumers or purchasers in the several divisions of the Northern Circle :—

No.	Division.	Amount.	Rrmarks.
		Rs. a. p.	
1	North Thána	4,101 0 0	
2	South Thána	2,375 0 0	
3	East Khándesh	542 0 0	
4	West Khándesh	*9,300 0 0	* Of this amount Rs. 7,780 are for rosha grass stills.
5	Násik	1,399 0 0	
6	Ahmednagar	1,418 0 0	
7	Poona	2,913 0 0	
8	Sátára	4,044 0 0	
9	Sholápur	530 0 0	
10	Surat	6,357 0 0	
11	Panch Mahás	2,193 0 0	
	Total ...	35,152 0 0	

3.—PRODUCE REMOVED BY RIGHT-HOLDERS.

198. No rights, save of way and water access, have been found to attach to the forests of the Northern Circle by the Forest Settlement Officers, and therefore right-holders have no *locus standi* in the forests.

4.—FREE GRANTS OF TIMBER.

199. A comparative statement of free grants of timber which have been made from forest reservations during the past two years in the several divisions of the Northern Circle is given below :—

No.	Division.	1886-87.	1887-88.	1888-89.
		Rs. a. p.	Rs. a. p.	Rs. a. p.
1	North Thána	50 0 0	43 14 0	340 0 0
2	South Thána	336 5 0	1,464 4 0	1,166 8 0
3	East Khándesh	.....	15 10 0	.....
4	West Khándesh	1,639 4 0	651 3 6	159 4 0
5	Násik	348 10 4	520 10 4	367 9 7
6	Ahmednagar	.....	34 7 8	4 0 0
7	Poona	120 0 0	95 0 0	817 0 0
8	Sátára	52 8 0	190 8 0	85 8 0
9	Sholápur	.....	.....	.....
10	Surat	724 0 0	36 0 0	198 8 0
11	Panch Maháls	973 10 0	998 5 6	807 5 0
	Total ...	4,244 5 4	4,049 15 0	3,440 10 7

Imports and Exports of Forest Produce.

200. The following statement shows the imports and exports in the North Thána division :—

No.	Range.	Imports.		Exports.			Remarks.
		Timber.	Firewood.	Timber.	Firewood.	Manvel Bámbus.	
		Pieces.	Khandis.	Pieces.	Khandis.		
1	Sálsette ...	2,740	2,535	1,037	454	...	
2	Bassein ...	...	...	...	20,318	6,326	
3	Máhím ...	...	...	70,034	34,929	66,777	
4	Dáhánu ...	...	...	110,281	12,461	169,019	
5	Umbargaon .	...	430	11,377	7,611	...	
6	Váda ...	...	...	43,274	1,795	...	
	Total ...	2,740	2,965	236,003	77,568	242,122	

201. There is a very large import trade of teak and other timber, bámbus and firewood in the Khándesh District from the Mewas States, Barwani, Holkar's territory, Gáikwár's State, &c. The import duty on such material amounted to Rs. 31,858 against Rs. 27,313 in the previous year. The following statement shows the importations of timber, firewood, charcoal and bámbus into the West Khándesh division during 1888-89 from the six Mewas States :—

No.	Name of Mewas State.	Cart-loads.	Head-loads.	Donkey-loads.	Total.
1	Singaspur	669	124	.....	793
2	Chikholi	4,324	...	.....	4,324
3	Nawalpur	355	2	.....	357
4	Nala	235	...	.....	235
5	Raisingpur	6,579	294	.....	6,873
6	Kathi	4,119	136	97	4,352
	Total ...	16,281	556	97	16,934

201-A. It has not been found to be possible to reduce to the denomination of cubic feet all the timber and firewood exploited from the forests because in the first place the small timber consisting of rafters, &c., which is by far the larger portion of the timber yield of the forests of the Northern Circle, is not measured, and in the second place no attempt is made or could be made to measure the timber on foot in the coupes which are sold to contractors and purchasers to exploit, for the magnitude and cost of such work prohibit this being done. A very rough estimate of the out-turn in cubic feet could, of course, be drawn up, but it would have no pretence to accuracy and Government have ordered that in official reports hypothetical figures should be avoided. Indeed the advantage of an estimate in cubic feet of the timber &c., that has been exploited from the forests of several divisions of a circle is open to question, for it may mislead instead of instruct. The financial statement of the year conveys information regarding the revenue yield of forests, and these figures which are correct are more useful for comparisons than mere estimates of what has been the yield in timber or firewood.

201-B. Timber and other forest produce is exploited from the forests chiefly by means of carts drawn by bullocks, as cart roads traverse the forests in all directions. When the fellings are made upon the sides of hills, of ravines, and in other places inaccessible to carts, the timber is dragged up or down, as the case may be, to the nearest cart track generally by oxen, buffaloes being largely employed; the animals are yoked to the larger end of the log and they drag it along the ground. Manual labour also is largely utilized in conveying rafters and small timber from difficult parts of the forests to roads and temporary depôts &c. Pack-bullocks are likewise used for the carriage of forest produce. The Wanjárás in the Sátpuda forests bring bamboos and small logs of wood to the market towns of the Tápti valley by means of pack animals.

CHAPTER V.

FINANCIAL RESULTS.

202. The forest revenue of the year is the largest on record, as will be seen from the figures given below, dating from 1878-79, the year of the introduction of the Indian Forest Act, whereby forest conservancy became more real and effective than it had been before.

	Rs.
1878-79	4,48,850
1879-80	6,07,625
1880-81	6,12,710
1881-82	7,99,498
1882-83	9,13,532
1883-84	9,58,315
1884-85	10,08,725
1885-86	10,37,297
1886-87	9,13,101
1887-88	9,68,625
1888-89	11,60,769

203. The following statement conveys a comparison between the revenue and expenditure of the year under report and that of the preceding year :—

Official year.	Receipts.	Expenditure.			Net Revenue.
		A. Conservancy and Works.	B. Establishment.	Total.	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1887-88	9,68,625 3 5	2,26,095 14 1	4,97,039 9 9	7,23,135 7 10	2,45,489 11 7
1888-89	11,60,768 8 5	2,41,836 7 4	4,85,575 12 5	7,27,412 3 9	4,33,356 4 8
Increase	1,92,143 5 0	15,740 9 3	.....	4,276 11 11	1,87,866 9 1
Decrease	.....	.....	11,463 13 4	.....	.....

204. The distribution of receipts among the several divisions of the Northern Circle, compared with the collection of the preceding year, is given in the following table :—

No.	Division.	1887-88.	1888-89.	Increase.	Decrease.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Direction	41 11 8	103 15 11	62 4 3	.....
2	North Thána	2,17,968 8 9	2,25,878 13 9	7,910 5 0	.....
3	South Thána	1,42,588 10 1	2,04,454 15 3	61,866 5 2	.....
4	East Khándesh	75,559 1 0	93,628 12 0	18,069 11 0	.....
5	West Khándesh	1,13,236 2 10	1,28,172 6 7	14,936 3 9	.....
6	Násik	82,051 4 10	93,379 15 2	11,328 10 4	.....
7	Ahmednagar	45,483 14 8	55,145 15 10	9,662 1 2	.....
8	Poona	93.819 8 9	1.01,909 4 2	8,089 11 5	.....
9	Sátára	68,832 5 10	85,356 2 5	16,523 12 7	.....
10	Sholápur	16,444 8 2	24,646 15 2	8,202 7 0	.....
11	Surat	55,485 9 7	99,807 12 3	44,322 2 8	.....
12	Panch Máháls	57,060 10 7	48,283 7 11	.....	8,777 2 8
13	Working Plans	53 2 8	.....	.....	53 2 8
	Total ...	9,68,625 3 5	11,60,768 8 5	2,00,973 10 4	8,830 5 4

205. It will be seen that there is an increase in revenue in all the divisions of the Northern Circle with the exception of the Panch Maháls, where the sales of standing teak were practically stopped owing to a determined combination on the part of the chief Godhra wood-merchants, with the object of keeping down prices. The amounts bid at the departmental auction-sales were not nearly so satisfactory as had been anticipated and consequently the decline of revenue.

206. In the North Thána Division the increase is due to the ready way in which the coupes of the season were sold and to the good prices obtained for them, to the receipts derived from the sale of firewood which had remained unremoved at the close of last working season in the coupes of last year and had in consequence reverted to Government, and also to improved prices realized at the annual sales of hirda, bámbus and other minor produce. In the South Thána Division the increase is due to the same causes, and in addition thereto to the receipts from the clearance sale of trees upon the catchment area of the Tánsa Lake, which is under construction for the water-supply of the city of Bombay. In the two Khándesh divisions there has been a larger demand for fuel, and better prices have ruled the market owing to new ginning factories and spinning mills having been established in different directions of the district. Grass and grazing have been more largely in demand owing to a scanty rainfall. In the divisions of Násik, Ahmednagar, Poona, Sátára and Sholápur, although there are decreases and increases under certain Budget heads and sub-heads, still the gross revenue of the year is in excess of that of the past year, and this is due to—

(*a*). Better prices at auction sales of grass and to the collection of larger sums in payment of grazing fees, closed forests having been opened to famishing cattle in the Deccan divisions on payment of fees, owing to scarcity of fodder which the delayed monsoon rainfall had caused.

(*b*). Larger collections of hirdas than anticipated and to the better prices which ruled the market.

The Divisional Forest Officer, Surat, reports that the increase in revenue is chiefly due to brisk sales of timber and to the better prices obtained for the material, more people, than usual, having come from the Deccan districts to puschase wood from the upper Dángs.

207. The following table shows the expenditure under "A. Conservancy and Works" distributed among several Forest divisions of the Northern Circle as compared with that of the preceding year :—

No.	Division.	1887-88.	1888-89.	Increase.	Decrease.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Direction	125 12 0	1,000 8 3	874 12 3	.....
2	North Thána	24,900 0 0	18,839 4 4	.....	6,060 11 8
3	South Thána	30,589 13 11	44,241 4 0	13,651 6 1	.....
4	East Khándesh	9,335 14 6	16,293 0 3	6,957 1 9	.....
5	West Khándesh	16,680 2 7	17,082 5 2	402 2 7	.....
6	Násik...	33,464 9 11	29,529 3 10	.....	3,935 6 1
7	Ahmednagar	14,955 13 5	11,808 1 0	.....	3,147 12 5
8	Poona	16,914 9 11	25,876 12 0	8,962 2 1	.....
9	Sátára	25,722 2 10	28,693 5 4	2,971 2 6	.....
10	Sholápur	3,844 15 2	4,522 1 2	677 2 0	.....
11	Surat...	25,567 7 2	22,074 7 8	.....	3,492 15 6
12	Panch Mahals	4,588 8 4	3,770 8 7	.....	817 15 9
13	Working Plans	19,406 0 4	18,105 9 9	.....	1,300 6 7
	Total ...	2,26,095 14 1	2,41,836 7 4	34,495 13 3	18,755 4 0

208. It appears that the expenditure in some divisions is greater by Rs. 34,495-13-3, while in others, less by Rs. 18,755-4-0 than that of the past year, and that a net increase of Rs. 15,740-9-3 results upon the expenditure of the preceding year, but the actuals are less than the sanctioned Budget Estimate of the year by over Rs. 8,000.

209. The decrease of Rs. 6,060-11-8 in expenditure of the North Thána Division, as compared with that of the preceding year, is due to less expenditure having been incurred under Roads, Buildings, Compensation for lands, Surveys, Plantations and other works. On the other hand in the South Thána Division the increase was caused by very considerable expenditure incurred by the Special Officer, Thánsa Water Works, in purchasing occupied lands for forest protection upon the Thánsa Lake catchment. The disbursement of Rs. 5,999-8-0 made for acquiring occupied lands included within the forest conservancy scheme of the Bhusával Táluka, has increased the expenditure in the East Khándesh Division beyond the figure of 1887-88; while the decrease in the Násik Division is accounted for by smaller expenditure on hirda collections and on fellings of timber and firewood, especially in Peint, Dindori and Kalvan ranges. In Ahmednagar the reduction in cost of Forest Settlement Office Establishment, and smaller expenditure in purchasing lands for forests explain the decrease. Rs. 8,739 have been debited under *A. VIII. c.* in the Poona Division on account of the cost of the Forest surveys in the Mával Range, and this debit has raised the total expenditure beyond that of the year before. Larger collections of hirdas were made owing to a more abundant seeding in the Sátára Division, and a larger quantity of firewood was cut to meet an increased demand for the article: owing to the difficulty in obtaining labour the rates of wages had to be raised, which has been one of the reasons for the increase in expenditure in this division. There is a small increase in the Sholápur Division and is chiefly due to greater expenditure upon constructing boundary-marks, for defining forest limits as the work has been carried out more vigorously; there has likewise been increased expenditure upon plantation works and eradication of prickly pear.

210. In the two Gujarát divisions of Surat and Panch Maháls and in the Working Plans Division a decrease in expenditure is to be seen, which is due in the Surat Division to the temporary establishment not having been entertained at its full sanctioned strength and to less expenditure being incurred under Plantations, &c., and in the Panch Maháls and Working Plans Division to less expenditure in the entertainment of temporary establishments.

211. There is a decrease of Rs. 11,463-13-4 under B Establishments owing to savings in the cost of sanctioned establishments, both superior and subordinate. A charge of Rs. 2,262-14-6 has been debited to the Northern Circle on account of payments made in Bombay to officers of other provinces. This charge has no connection whatever with the forests of the Northern Circle and if the amount were transferred to the debits of the Forest Circles to which the officers belong, then the net revenue of the Northern Circle would be increased by Rs. 2,263.

If credit were to be received in the forest accounts for the grass from reserved forests in the Poona Division, which is supplied to the Commissariat Department for the use of battery and cavalry horses, Transport animals and other Government cattle belonging to the Military Department, the surplus revenue of the Northern Circle would benefit by an additional sum of at least Rs. 25,000, for some of the best grass-producing reserved forests in the neighbourhood of Poona are assigned to the Commissariat Department for the supply of grass. A Pársi firm of contractors cuts the grass, transports it and delivers it at the several stables and yards in Poona and Kirkee. The contractor is required to deliver a stated weight of grass from all the reserved forests, and any grass that may be outturned over and above the contract quantity becomes the property of the contractor. It is possible that under such arrangement the Commissariat Department may obtain grass at a comparatively low rate, and that the Commissariat Contractor's profits may be very considerable; and at the same time it is not improbable that the grass revenue sacrificed by Government in the Forest Department may exceed the value of the gain in the Military Department over what would be the cost of an equal quantity of grass obtained in the open market. Villagers are complaining of the closure of sources of fodder grass supply by the grass alienation to the Commissariat Department against their agricultural cattle. Departmental cutting, transport and delivery of the grass, whether undertaken by the Forest or the Commissariat Department, would not, it may be assumed, prove satisfactory. But there seems no good reason why the Commissariat should not purchase in the open market, by inviting tenders for the supply, grass in the same way as they purchase firewood and other stores. And the Conservator ventures to believe that recourse to public competition without requiring certain reserved forests to be specially assigned for Military grass supply would be productive of considerable financial advantage.

CHAPTER VI.

GENERAL REMARKS.

212. At the commencement of the year the Conservator's camp was at Pálghar in the Máhím range of the North Thána division. Mr. Wilkins, the Divisional Forest Officer, and Mr. Fry, the Divisional Forest Officer, Working Plans, were with him. The Collector of the District was met in camp at Máhím when forest matters were discussed. From Pálghar the Conservator marched with these two officers through the Máhím and Bassein ranges, and on the way many compartments were visited, and the operations of the contractors in exploiting timber out of the coupes were inspected. The contractors complained of the difficulty experienced by them in obtaining labour and carriage for the felling of trees and the removal of wood, and of the small local demand; they attributed much of this to the departmental competition in local supply, whereby coast villagers, instead of going to the coupes for their requirements in forest produce, obtained permits from the Forest Department, mostly upon specially favoured rates, and drew their supplies direct from the forests, employing local labour and carriage for the extraction and transport of the material.

213. After leaving the North Thána division the Conservator proceeded into the Karjat range of South Thána, and the Divisional Forest Officer, Mr. Millett, encamped with him at Dhamot near Neral, where they were joined by the Divisional Forest Officer, Working Plans, and were employed up to the middle of May in inspecting the forests upon the northern slopes of the Mátherán range, and the allotments which had been made to the Thákurs for "ráb cultivation" upon the terraces. It was found that these men, although they had been employed on wages in constructing special forest boundary-marks to demarcate in a clear unmistakeable and detailed manner, the boundaries of their allotments, and of the reserved forests, which were conterminous, and could have no misunderstanding regarding the boundaries, had encroached with their "shifting cultivation" upon the reserved forests, and had made clearings by the axe and fire. The Conservator with the Divisional Forest Officers visited the Col-

lector of Thána on Mátherán to represent the proceedings of the Thákurs, and to discuss forest matters generally. It was finally decided that heavy assessment should be taken from the Thákurs for the plots they had cleared in the forests, and that they should be warned against a repetition of the offence.

214. Leaving the Thána District, the Conservator proceeded to Khandála in the Poona Collectorate, when Mr. Wroughton, the Divisional Forest Officer, Poona, joined his camp, and up to the end of the month the surrounding forests were inspected daily; the work of building special forest boundary-marks for the demarcation of their boundaries was in progress. Finally when thunderstorms heralding the coming monsoon commenced upon the Western Ghâts, the Conservator moved his camp to the head-quarters station, Poona, for the rainy season.

215. In the month of November, the Conservator was out in camp in the Bhimthadi Táluka of the Poona division at Rájegaon, a village on the banks of the Bhima river: there had been a deficient and unseasonable rainfall in the Deccan, and closed forests not including plantations had been thrown open to cattle, and it was desirable that the effects should be observed. The Divisional Forest Officer, Ahmednagar, Mr. Mainwaring, joined the Conservator's camp, Rájegaon, being on the borders of the Poona and Ahmednagar Collectorates. Some reserves in the Karjat range were visited and the Divisional Office and records were examined. In the villages of Rájegaon and Náigaon there are large areas of waste lands, some of which adjoin existing forest reserves, covered with an advanced and valuable growth of bábul trees, and it is very desirable that the present tree-growth should be preserved in this arid part of the country, which probably is visited by less rain than any other portion of the Eastern Deccan. Leaving Bhimthadi Táluka and inspecting on his way the forests in the Indápur and Málsiras range, and of Piliw in the Akalkot State, the Conservator proceeded into the Sángola range of the Sholápur division, where he was met by Mr. Hornidge, the Divisional Forest Officer, Sholápur, and forest reserves were inspected in the Sángola, Pandharpur and Mádha ranges, Mr. Hornidge being in company. The Conservator returned to Poona for the Christmas vacation, during which time the camp was moved, and in January the Conservator proceeded into the Bhiwndi Táluka of the South Thána division, where he was joined by Mr. Millett, the Divisional Forest Officer, and the several coupes in the range which were being worked by contractors and purchasers were visited. Mr. T. B. Fry, Divisional Forest Officer, Working Plans, who was engaged in completing the differentiation of the forests of the Bhiwndi range into blocks and compartments, also met the Conservator and blocks and compartments were visited daily, and the operations of the surveyors were examined. Mr. Wilkins, the Divisional Forest Officer, North Thána, joined the camp in the Bassein range, and accompanied the Conservator in inspections of forests and coupes in this and in the Váda ranges of North Thána. During the month of February the forests of, and the compartments under the axe, in the Váda, Sháhápur and Khardi ranges were inspected; the Tánsa Lake under construction and portion of the duct line from Tánsa Lake to Bombay was visited, and the contractors were interviewed regarding the supplies of timber and firewood they are drawing from the Government forests. Some of the coupes which have been specially marked out for them were examined and then parting from his office near Kására the Conservator marched into the Mokháda range to Suryamal, and was rejoined by his office at Mokháda; and after inspecting the forests and works in this mountainous range, and the new road-making from Váda up the Shirghát to the Deccan, the Conservator marched into the Násik division by way of the A'mboli Ghát, and encamped at Trimbak, when the forests at the head waters of the Godávari river were examined. Bamboos are growing freely and well in these forests. Mr. Betham, the Divisional Forest Officer, Násik, joined the Conservator at Mahirávni, and travelled with him through forests in the Igatpuri range, visiting plantations, &c. And once more parting from his office at Bhawli, as there was no cart road through the Ghát country, the Conservator walked through the forests of the Akola range of the Ahmednagar division on the eastern slopes of the Western Ghâts, and on the 31st of March his camp was pitched at Ambit in the Akola Dángs.

216. During his tour the Conservator examined the Divisional Forest Offices of North and South Thána, Working Plans, Poona, Ahmednagar, Sholápur and Násik, and he was satisfied with the state and condition in which he found them. The Conservator can safely say that a great development is taking place in the forests of the Northern Circle, and their value is augmenting rapidly and steadily despite the exercise of privileges which are very destructive in certain portions which are more accessible to markets, bandars and railway stations of export, and to large towns. Protection against illicit fellings is very good indeed, and against fire, in the face of the many difficulties to be contended against, is on the whole highly satisfactory in the more civilized districts. The plan of throwing open to cattle closed forests whenever the monsoon rains may be delayed in their arrival, or grass outside of forest areas may be scarce is fatal to reboisement. There is very little grass at such times in the closed forests and the advantages that cattle receive by their admission into these closed tracts are more imaginary than real, except in so far that crops of ligneous seedlings are browsed down and afford a mouthful here and there. In at least one year out of three, is the request made to open closed forests to cattle, and if the reboisement of the denuded hill lands of the Deccan is not so rapid or satisfactory as desired, the reason is the irregular way in which cattle are let into forest areas under treatment for reboisement from which they ought to be excluded rigidly and constantly for a term of years.

217. The Working Plan arrangements in the Thána Collectorate have been productive of much good; they have resulted in, amongst other advantages, establishing a local trade all over the district. The Collector, Mr. Vidal, who was President of the late Forest Commission, has recorded in the Thána Collector's No. 2524 of the 11th April 1889 :—

"The undersigned has received no complaints of any kind during his tour in the coast villages of Bassein, Máhím and Dáhánu, either of insufficiency of local supplies of timber and firewood or of too high prices being demanded by contractors. The local trade, which is now fast establishing itself, will certainly render departmental distribution unnecessary in future years. The progress thus made appears to have been very rapid and could not have been predicted with any certainty three or four years ago. It is none the less satisfactory."

And the Divisional Forest Officer, Mr. Wilkins, in his diary for the 19th March, has noted :—

"It is pleasing to see how kindly the villagers on the coast and elsewhere are taking to getting their timber and firewood from the contractors in preference to depending on the old custom of looking to the Sirkár to supply their wants departmentally."

218. The two Divisional Forest Officers of the Thána Collectorate, Messrs. Wilkins and Millett, and Mr. T. B. Fry, the Divisional Forest Officer, Working Plans, deserve much praise for the excellent work they have performed in this district, for their constant devotion to duty and their untiring industry.

219. The Conservator has much pleasure in testifying to the good work done by all the superior Forest Officers in his Circle, who deserve much credit for the intelligence, energy, zeal and activity with which they have administered their respective charges.

220. The two Khándesh Divisional Officers, Messrs. Desái and Fagan, have earned the praise of the Collector, Mr. Loch, C. S., who remarks in forwarding the report of Mr. Desái that :—

"Mr. Desái has moved actively about his charge and has done his best to make himself acquainted with a district very unlike to the one in which he had served for many years. His report shows that he has administered his division successfully, and there is no reason to doubt that if he remains in charge both the revenue and the work of the subordinates will improve."

And in forwarding Mr. Fagan's report he states :—

"Mr. Fagan's administration report is the record of a year's honest and successful work, successful mainly through the devotion which Mr. Fagan has displayed to his duty and to the energetic way in which he has made himself acquainted with his large charge and supervised the work of his subordinates. This he has done at the cost of a good deal of illness and discomfort to himself. The undersigned feels certain that he need say no more on this point, as he knows that Mr. Shuttleworth appreciates Mr. Fagan's value as a Divisional Forest Officer."

221. In addition to the abovementioned officers, Mr. Wroughton in Poona, Mr. Mainwaring in Ahmednagar, Mr. W. G. Betham in Násik, Mr. Hexton in Surat, Mr. Keys in the Panch Mahals, Mr. Greatheed in Sátára, and Mr. Hornidge in the Sholápur division have, one and all, co-operated heartily with the Conservator, and have earned his warmest acknowledgments, and it is only fitting that he should record the fact in this administration report.

222. The Commissioner of the Central Division, Mr. Moore, takes the greatest interest in forest matters, and is a warm supporter of forest conservancy; and it has given the Conservator much gratification to hear from Mr. Moore that he has observed great improvement in the vegetation covering the hills in parts of the Deccan since his last visit to these places some years ago.

223. The Conservator must also record his obligation to the Collectors generally in the Northern Circle, who are ever ready to consider his representations, and to give all assistance in their power to the department. Mr. Loch is a tower of strength to the forest administration in Khándesh, and Messrs. Waddington, East, Keyser, and Campbell have done very much for forest conservancy in the Ahmednagar, Poona, Sátára and Panch Mahals districts: without the cordial assistance of the Collectors and of their Assistants, successful management of the forests would be a matter of great difficulty.

224. Colonel Pullan, the Superintendent of forest surveys, has been very obliging, and both he and his subordinates have performed good serviceable work for this department, at the expense of much physical labour and discomfort, for the forest country which they are required to survey is rugged and mountainous; and they deserve high commendation for their industry. The forest maps which they have produced furnish evidence of the highest skill, care and precision; and these maps are valuable, not only for forest, but for purposes of the general administration.

225. Of Sub-Assistant Conservators, the following officers have been specially mentioned by the Divisional Forest Officers under whom they have served for the conscientious and enrgetic manner in which they have performed their duties:—

Messrs. A. R. Maidment and J. H. Clabby in North Thána division.

Mr. R. H. Madan, Acting Assistant Conservator in South Thána.

Mr. G. S. Hinge in West Khándesh.

Mr. W. A. Wallinger in Násik.

Mr. W. R. Gaunde in Poona.

226. Of the Range Forest Officers upon whom devolves the greatest responsibility, and the brunt of the executive work, the following have distinguished themselves:—

Shekh Abbas Shekh Ali.

Hasanali Mahomedali.

Joseph Baptista, L.C.E.

Govind Ramchandra Takle, who has administered a very difficult range with great credit to himself and satisfaction to his superiors.

Abdul Rasul Khajbaksh.

Ramchandra Raoji Bodwadkar.

Vishnu Mahadew Tilak.

Balaji Dhondadeo Dhekne.

Walabhram Mulji Bhat.

227. The office establishment of the Conservator, as well as of Divisional Forest Officers, have performed their duties in a highly satisfactory manner; and the thanks of the Conservator are due to Messrs. Krishnaji Babaji Phadke, Keshav Ganesh Vaidya, Krishnaji Vyankatesh Lohokare, Madharao Narayan Gokhale, as well as to all other clerks in his office, and to Messrs.

Shivram Bhikaji Rangnekar, Trimbak Bhikaji Lawhate, Damodar Tukaram, Nimbraj Keshao Chandekar, and Taimbak Govind Mahajan in the divisional offices.

228. During the year under report eight students joined the Forest Class attached to the College of Science, Poona, and one passed the final examination in September 1888. Mr. T. B. Fry, Divisional Forest Officer, Working Plans, gave, as has already been stated, a series of lectures in Forestry to the Forest Class in the College of Science during the rains; and it is much to be regretted that the Forestry lectures cannot be continuous throughout the several terms of the year, and the Conservator would submit that the time has arrived for special arrangement to be made whereby this advantage will be secured, for the proprietors of estates, Inámdárs as well as Native Chiefs, are awakening to an appreciation of the value of forest conservancy and to the desirability of bringing their forest properties under scientific management, and it is becoming apparent more and more every day that the maintenance and augmentation of the general prosperity of this country is dependent in a very great measure upon a widespreading system of approved forest conservancy.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Poona, 31st October 1889.

Forest Department, Bombay, Northern Circle.

Area of Reserved Forests, 1888-89.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1888.		Added during the year.	Excluded or transferred to other heads.	Area on 31st March 1889.		Number and Date of Notification of addition or transfer.	Remarks.
			Acres.	Equivalent in Square Miles.	Acres.	Acres.	Acres.	Equivalent in Square Miles.		
				Sq.m. a.				Sq.m. a.		
North Thána ...	Thána		182,296	284 536	*a* 9,722	*b* 2	192,016	300 16	*a* No. 5177B 1-8-88.	
South Thána ...			208,395	325 395	*c* 907	*d* 1	209,301	327 21	*b* No. 5914 3-9-88.	
East Khándesh ...	Khándesh ...		463,832	724 472	*e* 48,108	*f* 100	511,840	799 480	*c* Nos. 6457A 25-9-88, 7732A 19-11-88, 5915 3-9-88.	
West Khándesh ...			792,314	1,237 634	*g* 302	...	792,616	1,238 296	*d* Nos. 5823 29-8-8.	
									e Nos. 7352 5-11-88, 7352B 30-1-89, 1112 11-2-89, 764 30-1-89.	
Násik	Násik		708,795	1,107 315	*h 109,280	*i* 247	817,828	1,277 548	*f* No. 710 28-1-89.	
Ahmednagar ...	Ahmednagar ...		526,620	822 540	*j* 23,397	*k* 286	549,731	858 611	*g* Nos. 3991 19-6-89, 2485 24-4-88.	
Poona	Poona		465,783	727 503	*l* 8,505	*m* 540	473,748	740 148	*h* Nos. 3770 11-6-88, 3988 19-6-88. 965 14-2-89, 8247 10-12-98, 2701A 1-5-88.	
Sátára	Sátára		425,326	664 366	*n* 3,656	*o* 2,741	426,241	666 1	*i* Nos. 4720 16-7-88, 5859 31-8-89, 8276 11-12-88, 8541 21-12-88.	
Sholápur	Sholápur ...		173,347	270 547	1,197	18	174,526	272 446	*j* Nos. 4255 26-6-88, 3795 11-6-88, 4169 26-6-88, 7271 31-10-88.	
Surat	Surat		44,284	69 124	...	...	44,284	69 124	*k* Nos. 8541 21-12-88, 5559 6-8-88.	
Dángs			434,240	678 320	...	...	434,240	678 320	*l* Nos. 4826A 20-7-88, 5471 13-8-88.	
Kaira	Kaira		39	0 39	...	...	39	0 39	*m* Nos. 5557 16-8-88, 4609 11-7-88, 753 29-1-89, 5312 7-8-88.	
Panch Maháls ...	Panch Maháls ...		114,937	179 377	*p* 4,753	*q* 2,393	117,297	183 177	*n* Nos. 7119 20-10-88, 7348 5-11-88.	
Ahmedabad ...	Ahmedabad ...		21,878	34 118	...	...	21,878	34 118	*o* No. 8423 17-12-88.	
									p No. 3280 22-5-88.	
		Total ...	4,562,086	7,128 166	209,827	6,328	4,765,585	7,446 145	*q* Nos. 1546 5-2-89, 6699 8-10-89.	

* Out of this 53,016 acres represent rectification of area.

Dated Poona, 31st October 1889.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 49 A.

Forest Department, Bombay, Northern Circle.

Area of Protected Forests, 1888-89.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1888.		Added during the year.	Excluded or transferred to other heads.	Area on 31st March 1889.		Number and Date of Notification of addition or transfer.	Remarks.
			Acres.	Equivalent in Square Miles.	Acres.	Acres.	Acres.	Equivalent in Square Miles.		
				Sq.m. a.				Sq.m. a.		
North Thána ...	Thána		191,089	298 369	...	*a* 1,809	189,280	295 480	*a* No. 5177B / 1-8-88.	
South Thána ...			225,668	352 388	...	*b* 4	225,664	352 384	*b* No. 4991 / 26-7-88.	
East Khándesh ...	Khándesh ...		43,681	68 161	...	*c* 9,600	34,081	53 161	*c* No. 2478 / 24-4-88.	
West Khándesh...			124,951	195 151	...	...	124,951	195 151		
Násik	Násik		...	.....	...	...	.....	.....		
Ahmedangar ...	Ahmednagar ...		7,154	11 114	...	...	7,154	11 114		
Poona	Poona		...	.....	...	...	.....	.....		
Sátára	Sátára		17	0 17	*d* 11	...	28	0 28	*d* No. 6899B / 16-10-88.	
Sholápur	Sholápur ...		...	.....	...	...	.....	.....		
Surat	Surat		...	.....	...	...	.....	.....		
Dángs			...	.....	...	...	.....	.....		
Kaira	Kaira		...	.....	...	...	.....	.....		
Panch Maháls ...	Panch Maháls ...		89,853	140 253	*e* 782	*f* 1,590	89,045	139 85	*e* No. 3640 / 4-6-88. *f* Nos. 2625 / 30-4-88, 3463A / 29-5-88, 3595 / 4-6-88, 4253 / 28-6-88.	
		Total ...	682,413	1,066 173	793	13,003	670,203	1,047 123		

Dated Poona, 31st October 1889.

A. T. SUTTLEWORTH,
Conservator of Forests, Northern Circle.

B 623—15 N C

FORM No. 50.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Register of breaches of Forest Rules during 1888-89.

Forest Division and Civil District.	Cases pending from 1887-88.	NEW CASES OF THE YEAR.					Total Cases.	DISPOSED OF DURING THE YEAR.						Cases pending at close of year.
		Injury to Forest by fire.	Unauthorized felling or appropriation of wood and minor Forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other Offences.	Total new Cases of the year.		CONVICTIONS.		ACQUITTALS.		TOTAL.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
North Thána	7	...	57	...	8	65	72	38	73	34	61	72	134	...
South Thána	19	1	173	3	27	204	223	158	287	51	136	209	423	14
East Khándesh	8	...	31	3	8	42	50	33	67	15	23	48	90	2
West Khándesh	39	11	16	2	78	107	146	99	197	27	40	126	237	20
Násik	10	...	35	10	7	52	62	43	68	5	9	48	77	14
Ahmednagar	9	...	12	18	20	50	59	38	86	15	47	53	133	6
Poona	...	...	82	197	33	312	312	232	554	47	139	279	693	33
Sátára	8	2	20	10	5	37	45	27	44	17	40	44	84	1
Sholápur	10	1	5	81	22	109	119	67	138	34	83	101	221	18
Surat	2	...	5	...	2	7	9	9	25	...	1	9	26	...
Panch Mahals	...	...	38	...	4	42	42	32	102	10	34	42	136	...
Total ...	112	15	474	324	214	1,027	1,139	776	1,641	255	613	1,031	2,254	108

Dated Poona, 31st October 1889.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 51.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Area of Forest Tracts protected from Fire during the Dry Season, 1889, to accompany Report for 1888-89.

Division.	Forest Tracts.	Year in which protection commenced.	Area actually protected up to 15th June 1888.	During the Dry Season of 1889.			Cost during the Season.	Remarks.
				Area attempted to be protected.	Failures.	Actually protected.		
			Acres.	Acres.	Acres.	Acres.	Rs. a.	
North Thána ...	Sálsette	1878-79 ...	17,121	17,243	267	16,976	208	
	Bassein	,, ...	37,800	41,393	717	40,676	96	
	Máhim	,, ...	97,182	101,407	1,912	99,495	399	
	Dáhánu	,, ...	124,738	126,673	4,555	122,118	269	
	Umbergaon	,, ...	37,717	38,717	561	38,156	56	
	Váda	,, ...	39,589	48,560	7,037	41,523	162	
	Total ...		354,145	373,993	15,049	358,944	1,190	
South Thána ...	Bhiwndi	1878-79 ...	42,992	46,308	1,922	44,386	70	
	Sháhápur	,, ...	61,936	69,871	1,755	68,116	122	
	Khardi	,, ...	80,395	80,425	1,113	79,312	51	
	Mokháda	,, ...	58,300	59,685	1,100	58,585	21	
	Kalyán	,, ...	31,509	35,482	6,713	28,769	50	
	Murbád... ...	,, ...	90,143	90,840	685	90,155	61	
	Karjat	,, ...	30,980	35,134	315	34,819	66	
	Khálápur	,, ...	20,987	17,220	311	16,909	32	
	Total ...		417,242	434,965	13,914	421,051	473	
East Khándesh...	Amalner	1878-79 ...	2,046	19,916	175	19,741	...	
	Páchora	,, ...	25,414	22,986	...	22,986	...	
	Bhadgaon							
	Bhusával	,, ...	62,152	12,389	1,831	10,558	...	
	Edalabad							
	Chálisgaon	,, ...	62,375	17,654	230	17,424	...	
	Chopda	,, ...	106,112	134,871	806	134,065	...	
	Erandol...	,, ...	12,169	12,169	...	12,169	...	
	Jalgaon...	,, ...	20,788	3,132	506	2,626	...	
	Jámner	,, ...	18,705	40,960	2,979	37,981	8	
	Ráver	,, ...	181,505	43,660	9,340	34,320	14	
	Sávda							
	Yával							
	Total ...		491,266	307,737	15,867	291,870	22	
West Khándesh	Akráni	1878-79 ...	159,601	166,176	166,176	Nil	9	
	Dhulia	,, ...	112,739	118,153	Nil.	118,153	...	
	Nandurbár	,, ...	32,804	72,009	36,218	35,791	...	
	Nizámpur	,, ...	130,102	151,516	2,125	149,391	3	
	Pimpalner	,, ...	64,873	70,570	21,806	48,764	2	
	Sháháda	,, ...	10,100	85,104	85,104	Nil	...	
	Shirpur...	,, ...	149,000	349,144	197,310	151,834	23	
	Sindkheda	,, ...	23,968	24,916	Nil.	24,916	6	
	Navápur	,, ...	Nil.	58,930	58,930	Nil	...	
	Taloda	,, ...	Nil.	75,500	75,500	Nil	2	
	Total ...		683,187	1,172,018	643,169	528,849	45	
Násik	Násik	1878-79 ...	30,989	43,698	643	43,055	...	
	Igatpuri	,, ...	37,118	53,883	62	53,821	...	
	Sinnar	,, ...	39,815	35,371	5	35,366	...	
	Dindori	,, ...	20,084	55,256	297	54,959	...	
	Niphád	,, ...	3,446	3,446	...	3,446	...	
	Chándor	,, ...	24,939	24,948	...	24,948	...	
	Yeola	,, ...	31,332	31,496	4	31,492	...	
	Báglán	,, ...	108,772	124,177	497	123,680	...	
	Kalvan	,, ...	123,758	109,356	9,178	100,178	...	
	Peint	,, ...	57,544	107,217	1,278	105,939	...	
	Málegaon	,, ...	106,757	121,914	110	121,804	...	
	Nándgaon	,, ...	121,908	107,066	...	107,066	...	
	Total ...		706,462	817,828	12,074	805,754	...	

FORM No. 51—*continued.*

Division.	Forest Tracts.	Year in which protection commenced.	Area actually protected up to 15th June 1888.	During the Dry Season of 1888.			Cost during the Season.	Remarks.
				Area attempted to be protected.	Failures.	Actually protected.		
			Acres.	Acres.	Acres.	Acres.		
Ahmednagar ...	Nagar	1878-79 ...	39,902	41,694	111	41,583	...	
	Párner	,, ...	69,711	68,856	89	68,767	...	
	Shrigonda	,, ...	43,147	44,243	828	43,415	...	
	Karjat	,, ...	49,733	50,313	3	50,310	...	
	Jámkhed	,, ...	38,799	39,784	87	39,697	...	
	Shevgaon	,, ...	27,144	27,603	...	27,603	...	
	Nevása	,, ...	18,425	19,881	...	19,881	...	
	Ráhuri	,, ...	48,633	50,970	...	50,970	...	
	Koregaon	,, ...	3,941	8,889	...	8,889	...	
	Sangamner	,, ...	76,115	86,414	...	86,414	...	
	Akola	,, ...	109,738	111,086	1,437	109,649	...	
	Total ...		525,288	549,733	2,555	547,178	...	
Poona	Junnar	1878-79 ...	55,043	55,269	76	55,193	...	
	Indápur...	,, ...	62,531	62,543	51	62,493	...	
	Khed	,, ...	54,178	55,332	404	54,927	...	
	A'mbegaon	,, ...	43,307	43,479	349	43,130	...	
	Sirúr	,, ...	20,273	20,275	40	20,235	...	
	Purandhar	,, ...	25,399	25,423	15	25,408	...	
	Bhimthadi	,, ...	53,802	53,826	...	53,826	...	
	Bárámati	,, ...	19,971	20,031	...	20,031	...	
	Haveli	,, ...	49,723	50,009	281	49,728	...	
	Mulshi	,, ...	25,105	25,277	184	25,093	...	
	Mával	,, ...	54,022	54,319	235	54,084	...	
	Total ...		463,354	465,783	1,635	464,148	...	
Sátára	Mahábaleshvar ...	1878-79 ...	41,388	40,759	243	40,516	15	
	Mán	,, ...	56,155	56,156	...	56,156	...	
	Khatáv	,, ...	16,503	16,503	...	16,503	...	
	Karád	,, ...	35,966	35,986	9	35,977	...	
	Wái	,, ...	24,878	24,892	...	24,892	...	
	Koregaon	,, ...	28,654	28,772	86	28,686	...	
	Sátára	,, ...	22,263	22,263	...	22,263	...	
	Tásgaon...	,, ...	13,573	13,573	...	13,573	...	
	Khandála	,, ...	14,189	14,195	...	14,195	...	
	Jávli	,, ...	50,782	50,802	17	50,785	...	
	Khánápur	,, ...	30,427	30,428	3	30,425	...	
	Válva	,, ...	26,780	25,569	...	25,569	...	
	Pátan	,, ...	62,792	66,369	123	66,246	...	
	Total ...		424,350	426,267	481	425,786	15	
Sholápur... ...	Sholápur	1878-79 ...	37,261	37,886	581	37,305	...	
	Bársi	,, ...	8,476	8,536	52	8,484	...	
	Mádha	,, ...	30,679	31,383	1,219	30,164	...	
	Karmála	,, ...	50,486	50,479	...	50,479	...	
	Pandharpur	,, ...	5,873	5,873	...	5,873	...	
	Sángola...	,, ...	17,780	17,757	...	17,757	...	
	Málsiras	,, ...	21,431	21,433	...	21,433	...	
	Total ...		171,986	173,347	1,852	171,495	...	
Surat	Mándvi	1878-79 ...	34,386	41,480	9,023	32,457	...	
	Dángs	,, ...	556,800	434,240	289,493	144,747	...	
	Chikhli	,, ...	116	825	...	825	...	
	Balsár and Párdi ...	,, ...	1,504	1,529	15	1,514	...	
	Bárdoli	,, ...	451	450	...	450	...	
	Total ...		593,257	478,524	298,531	179,993	...	
Panch Maháls ...	Godhra	1878-79 ...	54,944	120,801	3,415	117,386	...	
	Kálol	,, ...	13,586	22,318	3,133	19,185	...	
	Hálol	,, ...	23,747	27,613	805	26,808	...	
	Dohad	,, ...	46,217	46,538	230	46,308	...	
	Jhálod	,, ...	26,802	26,872	3,505	23,367	...	
	Total ...		165,296	244,142	11,088	233,054	...	
	Grand Total ...		4995,833	5,444,337	1,016,215	4,428,122	1,745	

Dated Poona, 31st October 1889.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 52.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Area of Plantations, 1888-89.

Division.	Name of Plantation.	Area in Acres.				Receipts.	Charges.	Remarks.
		On 1st April 1888.	Added during the year.	Excluded during the year.	Area on 31st March 1889.	Of the year.		
	Regular Plantations.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	
North Thána ...	Sálsette	107	...	...	107	...	33	
	Bassein	1	...	...	1	...	...	
	Mahim	1,880	...	...	1,880	...	127	
	Dahánu	2	...	...	2	...	6	
	Váda	92	...	...	92	...	20	
	Umbargaon	127	...	...	127	...	...	
	Total ...	2,209	...	...	2,209	...	186	
South Thána ...	Bhiwndi	261	75	...	336	...	...	
	Mokháda	5	7	...	12	...	...	
	Karjat	49	40	...	89	...	110	
	Sháhápur	...	30	...	30	...	233	
	Total ...	315	152	...	467	...	343	
East Khándesh	Amalner	...	1	...	1	...	57	
	Bhusával	...						
	Chopda	...	1	...	1	...	33	
	Edalabad	...						
	Erandol	...	1	...	1	...	38	
	Jalgaon	...						
	Jámner	...	1	...	1	...	96	
	Pachora	...						
	Ráver	...						
	Sávda	...	6	...	6	...	60	
	Yával	...						
	Total ...	...	10	...	10	...	284	
West Khándesh	Akráni	...	11	...	11	...	100	
	Dhulia							
	Nizámpur	...	25	...	25	...	67	
	Pimpalner	...	2	...	2	...	63	
	Taloda							
	Total ...	...	38	...	38	...	230	
Násik	.....			Nil.				
Ahmednagar ...	Nagar-Dongargaon... ...	142	...	...	142	...	...	
Poona	.....			Nil.				
Sátára	Khatáv	207	46	...	253	...	176	
	Koregaon	227	11	...	238	...	98	
	Karád	252	18	...	270	...	50	
	Khandála	31	45	...	76	...	65	
	Válva	69	6	...	75	...	22	
	Sátára	28	40	...	68	...	61	
	Wái	205	...	...	205	...	15	
	Mán	48	106	...	154	...	56	
	Jávli	28	13	...	41	...	33	
	Mahábaleshvar	385	250	...	635	...	195	
	Tásgaon	296	...	...	296	...	...	
	Pátan	114	52	...	166	...	36	
	Khánápur	41	27	...	68	...	53	
	Shirála	26	...	...	26	...	...	
	Total ...	1,957	614	...	2,571	...	860	
Sholápur... ...	.....			Nil.				
Surat	.....			Nil.				
Panch Máhals ...	Kálol	...	26	...	26	...	127	
	Total Regular Plantations...	4,623	840	...	5,463	...	2,030	
	Cultural Operations.							
North Thána...	Sálsette	155	154	...	309	...	197	
	Bassein	33	1,186	...	1,219	...	196	
	Máhim	88	1,456	...	1,544	...	180	
	Dáhánu	55	1,659	...	1,714	...	147	
	Umbargaon	39	320	...	359	...	96	
	Váda	60	712	...	772	...	170	
	Total ...	430	5,487	...	5,917	...	986	

FORM No. 52—*continued.*

Division.	Name of Plantation.	Area in Acres. On 1st April 1888.	Area in Acres. Added during the year.	Area in Acres. Excluded during the year.	Area in Acres. Area on 31st March 1889.	Receipts. Of the year.	Charges. Of the year.	Remarks.
	Cultural Operations—contd.	Acres.	Acres.	Acres.	Acres.	Rs.	Rs.	
South Thána ...	Bhiwndi	392	183	...	575	...	6	
	Sháhápur	194	424	...	618	...	30	
	Khardi	119	137	...	256	...	48	
	Mokháda	94	72	...	166	...	19	
	Kalyán	262	573	...	835	...	14	
	Murbád	676	...	...	676	...	5	
	Karjat	185	35	...	220	...	102	
	Khálápur	631	37	...	668	...	113	
	Total ...	2,553	1,461	...	4,014	...	337	
East Khándesh.	Amalner	2,119	7	...	2,126	...	...	
	Bhadgaon	272	...	...	272	...	...	
	Bhusával	1,606	30	...	1,636	...	...	
	Chálisgaon	457	35	...	492	...	...	
	Chopda	415	120	...	535	...	...	
	Edalabad	360	29	...	389	...	...	
	Erandol	4,984	26	...	5,010	...	...	
	Jalgaon	404	53	...	457	...	...	
	Jámner	617	30	...	647	...	...	
	Páchora	30	5	...	35	...	..	
	Ráver	100	42	...	142	...	...	
	Sávda	236	30	...	266	...	...	
	Yával	95	30	...	125	...	...	
	Total ...	11,695	437	...	12,132	...	..	
West Khándesh	Akráni	138	18	...	156	...	...	
	Dhulia	3,128	25	...	3,153	...	...	
	Nandurbár	698	120	...	818	...	...	
	Navápur	1,346	40	...	1,386	...	...	
	Nizámpur	446	65	...	511	...	...	
	Pimpalner	1,384	16	...	1,400	...	...	
	Sháháda	3,357	41	...	3,398	...	...	
	Shirpur	1,695	10	...	1,705	...	...	
	Sindkheda	5,795	167	...	5,962	...	49	
	Taloda	850	121	...	971	...	...	
	Total ...	18,837	623	...	19,460	...	49	
Násik	Násik	61	2	...	63	...	200	
	Igatpuri	85	115	...	200	...	190	
	Chándvad	160	100	...	260	...	57	
	Sinnár	294	...	...	294	...	207	
	Yeola...	1,602	325	...	1,927	...	928	
	Niphád	417	27	...	444	...	265	
	Dindori	119	23	...	142	...	62	
	Málegaon	1,234	324	100	1,458	...	676	
	Nándgaon	23	23	...	46	...	36	
	Báglán	50	30	...	80	...	67	
	Kalvan	15	18	...	33	...	42	
	Peint	...	...	...	...	...	11	
	Total ...	4,060	987	100	4,947	...	2,741	
Ahmadnagar ...	Nagar	671	87	...	758	...	250	
	Párner	556	21	...	577	...	55	
	Shrigonda	747	306	...	1,053	...	150	
	Karjat	232	87	...	319	...	39	
	Jámkhed	1,715	106	...	1,821	...	70	
	Shevgaon	444	62	..	506	...	24	
	Nevása	185	5	...	190	...	60	
	Ráhuri	131	87	...	218	...	115	
	Kopargaon	285	91	...	376	...	48	
	Sangamner	1,461	57	...	1,518	...	63	
	Akola	86	2	...	88	...	10	
	Total ...	6,513	911	...	7,424	...	884	
Poona	Junnar	965	...	...	965	...	8	
	Indápur	2,586	229	...	2,815	..	120	
	Khed...	6,188	..	...	6,188	...	17	
	Ambegaon	2,280	19	...	2,299	...	18	
	Sirúr	5,655	96	...	5,751	...	337	
	Purandhar	5,950	...	...	5,950	...	14	
	Bhimthadi	3,531	90	...	3,621	...	408	
	Barámati	2,002	35	...	2,037	...	142	
	Haveli	1,384	37	...	1,421	...	243	
	Mulshi	849	...	...	849	...	10	
	Mával	1,119	...	...	1,119	...	16	
	Plantation by Forest guards	172	1,480	...	1,652	...	...	
	Total ...	32,681	1,986	...	34,667	...	1,333	

FORM No. 52—*concluded.*

Division.	Name of Plantation.	Area in Acres. On 1st April 1888.	Added during the year.	Excluded during the year.	Area on 31st March 1889.	Receipts Of the year.	Charges Of the year.	Remarks
		Acres	Acres.	Acres.	Acres.		Rs.	
Sátára ...	Mahábaleshvar	2,035	1,775	...	3,810	...	...	
	Shirála	84	187	...	271	..	...	
	Sátára	977	712	...	1,689	...	...	
	Mán	2,253	3,724	...	5,977	...	...	
	Válva	1,834	681	...	2,515	...	...	
	Khatáv	1,085	68	...	1,153	...	...	
	Karád	13,118	5,263	...	18,381	...	...	
	Tásgaon	1,023	298	...	1,321	...	...	
	Khánápur	2,386	1,144	...	3,530	...	...	
	Khandála	3,738	480	...	4,218	...	...	
	Pátan	3,933	1,502	...	5,435	...	...	
	Jávli...	6,231	1,027	...	7,258	...	...	
	Wái	17,734	12	...	17,746	...	...	
	Koregaon	9,311	3,136	...	12,447	...	...	
	Total ...	65,742	20,009	...	85,751	...	...	
Sholápur ...	Sholápur	1,405	1,760	...	3,165	...	447	
	Bársi	322	1,177	...	1,499	...	122	
	Mádha	4,873	1,618	...	6,491	...	269	
	Pandharpur	2,111	588	...	2,699	...	241	
	Karmála	1,728	2,289	...	4,017	...	430	
	Sángola	372	2,679	...	3,051	...	165	
	Málsiras	993	530	...	1,523	...	132	
	Total ...	11,804	10,641	...	22,445	...	1,806	
Surat	Dángs	1,715	...	1,715	...	...	11	
	Chorási	22	...	...	22	...	...	
	Bulsár	143	4	...	147	...	...	
	Párdi...	34	6	...	40	...	...	
	Chikhli	133	7	...	140	...	...	
	Mándvi	568	...	...	568	...	...	
	Railway strips from Vásad to A'nand and Nadiád to river shed	5 miles.	...	5 miles.	...	...	...	
	Total ...	2,615 5 miles.	17	1,715 5 miles.	917	...	11	
Panch Mahás ...	Godhra	78	74	...	152	...	...	
	Kálol	16	12	...	28	...	...	
	Hálol	19	20	...	39	...	...	
	Dohad	22	22	...	44	...	...	
	Jhálod	13	12	...	25	...	...	
	Total ...	148	140	...	288	...	...	
	Total Cultural Operations...	157,078 5 miles.	42,699	1,815 5 miles.	197,962	...	8,147	
	Grand Total ...	161,701 5 miles.	43,539	1,815 5 miles.	203,425	...	10,177	

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Dated Poona, 31st October 1889.

FORM No. 53.

Forest Department, Bombay, Northern Circle.

Trees felled by Government agency during the year 1888-89.
(Selection Fellings.)

Division.	Trees felled.		Remarks.
	Description.	Number.	
North Thána	Nil	...	There are no selection fellings in these divisions.
South Thána	Nil	...	
East Khándesh	Nil	...	
West Khándesh	Teak	37,275	
	Tiwas	373	
	Anjan	23,160	
	Dhávda	231	
	Khair	2,527	
	Ain	56	
	Bábul	286	
	Miscellaneous	270	
	Total	64,178	
Násik	Nil	...	Do. do.
Ahmednagar	Nil	...	
Poona	Nil	...	
Sátára	Nil	...	
Sholápur	Nil	...	
Surat	Teak	3,583	
Panch Mahál	Nil	...	There is no selection felling in this division.
	Grand Total	67,761	
	Abstract of the Circle.		
	Teak	40,858	
	Tiwas	373	
	Anjan	23,160	
	Dhávda	231	
	Khair	2,527	
	Ain	56	
	Bábul	286	
	Miscellaneous	270	
	Total	67,761	

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Dated Poona, 31st October 1889.

623—3

FORM No. 54.

Forest Department, Bombay, Northern Circle.

Outturn of Timber and Firewood during the year 1888-89.

Division.	Description of Materials.	Outturn in Cubic Feet.								Remarks.
		Selection Fellings.	Clearances.	Thinnings.	Total.	Removed by				
						Government Agency.	Purchasers.	Free Grants.	Right-holders.	
North Thána.	Teak pieces	...	...	308,099	308,099	26,152	281,488	459	...	
	Junglewood pieces	...	...	1,494	1,494	...	...	...	...	
	Firewood ... Khandis.	...	...	84,235	84,235	8,106	76,129	...	...	
	Do. under permit system... Khandis.	...	..	6,446	6,446	...	6,446	...	...	
	Bámbus ... .. No.	...	...	319,059	319,059	...	319,059	...	...	
	Do. ... Cart-loads.	...	...	2,463	2,463	...	2,463	...	...	
	Kitta ... ... Do.	...	...	2,843	2,843	...	2,843	...	...	
	Ain bark	...	...	5	5	5	...	...	...	
	Myrabolans	...	...	109	109	109	...	...	...	
	Karvi ... ... Cart-loads.	...	...	749	749	...	749	...	...	
South Thána.	Teak pieces	...	364,221	...	364,221	12,864	350,928	429	...	
	Sisu wood	...	18	...	18	18	...	...	...	
	Junglewood	...	40,799	...	40,799	3,936	34,854	2,009	...	
	Firewood pieces	...	336	...	336	336	...	...	...	
	Do. Khandis.	...	37,264	...	37,264	3,178	34,086	...	...	
	Bámbus ... Head-loads.	...	2,631	...	2,631	31	2,600	...	...	
	Do. ... Cart-loads.	...	221	...	221	...	221	...	...	
	Do. ... ... No.	...	155,746	...	155,746	2,175	153,571	...	...	
East Khándesh.	Teak rafters	...	...	20,000	20,000	20.000	..	...	...	
	Do. pieces	...	...	25	25	...	25	...	...	
	Do. ... Cart-loads.	...	...	2	2	...	2	...	...	
	Do, ... Head-loads.	...	...	231	231	...	231	...	...	
	Junglewood rafters	...	...	2,500	2,500	2,500 Logs.	... Pieces.	...	...	
	Do. pieces	...	...	965	965	500	465	...	...	
	Do. ... Cart-loads.	...	...	2,414	2,414	...	2,414	...	...	
	Do. ...Bullock-loads	...	...	1,002	1,002	...	1,002	...	...	
	Do. ...Buffalo-loads	...	...	464	464	...	464	...	...	
	Do. ... Head-loads.	...	...	5,912	5,912	...	5,912	...	...	
	Firewood ... Khandis.	...	...	9,525	9,525	9,525	...	...	...	
	Do. ... Cart-loads.	...	...	27,582	27,582	...	27,582	...	..	
	Do. ... Head-loads.	...	...	3,185	3,185	...	3,185	...	...	
	Do. ...Bullock-loads	...	...	1,300	1,300	...	1,300	...	...	
	Do. ...Donkey-loads.	...	...	410	410	...	410	...	...	
	Do. ... Horse-loads.	...	...	37	37	...	37	...	...	
	Bámbus ... Head-loads.	...	...	1,040	1,040	...	1,040	...	...	
	Do. ... ... No.	...	...	256,800	256,800	...	256,800	...	...	
West Khándesh.	Teak logs	...	2,569	772	3,341	1,584	...	...	...	1,757 remained unsold.
	Do. rafters	...	34,235	10,905	45,140	37,336	...	...	...	7,804 do.
	Do. pieces	...	28,360	16,266	44,626	39,703	164	22	...	4,737 do.
	Junglewood pieces	...	...	2,293	2,293	1,283	580	430	...	
	Do. ... Cart-loads.	...	...	14,357	14,357	...	14,357	...	...	
	Firewood ... C. feet.	...	11,862	353,500	365,362	134,937	...	...	..	230,425 do.
	Do. ... Cart-loads.	...	...	14,640	14,640	...	14,640	...	...	
	Bámbus ... ... No.	...	.. ...	256,772	256,772	...	256,772	...	...	
Násik.	Teak rafters (of 1887-88) ...	...	77,417	...	77,417	76,894	...	493	...	Balance 30 of the year 1887-88.
	Do. do.	...	36,523	..	36,523	22,278	6,644	2,507	...	Balance 5,394
	Do. pieces	...	132	...	132	...	24	108	...	
	Do. logs	...	644	...	644	...	644	...	...	
	Do. green ... C. feet.	...	1,432	...	1,432	...	1,432	...	...	
	Tiwas do. ... Do. ...	...	17	...	17	...	17	...	...	
	Khair do. ... Do. ...	...	44	...	44	...	44	..	...	
	Kinhai do. ... Do. ...	...	2	...	2	...	2	..	...	
	Ain do. ... Do. ...	...	1	...	1	...	1	...	...	
	Sisu do. ... Do. ...	...	172	...	172	...	172	...	...	
	Hed do, ... Do. ...	...	104	...	104	...	104	...	...	
	Junglewood pieces	...	3,174	...	3,174	950	871	1,353	...	
	Firewood (Bombay Khandis of 1887-88)	...	1,148	...	1,148	148	...	...	...	
	Firewood pieces	...	298	...	298	174	124	...	...	Balance 1,000 Khandis of 1887-88.
	Do. (Khandis of 1888-89)	...	5,857	...	5,857	4,199	941	108	...	Balance 609
	Bámbus ... ... No.	...	178,407	...	178,407	...	178,407	...	...	Khandis.
	Do. ... Head-loads.	...	831	...	831	...	831	...	...	
	Do. ... Cart-loads.	...	91	...	91	...	91	...	...	

FORM No. 54—*continued.*

Division.	Description of Materials.	Outturn in Cubic Feet.								Remarks.
		Selection Fellings.	Clearances.	Thinnings.	Total.	Removed by				
						Government Agency.	Purchasers.	Free Grants.	Right-holders.	
Ahmednagar.	Teak rafters	...	...	50,246	50,246	50,246	...	...	...	
	Jambul rafters	...	...	15,114	15,114	15,114	...	...	...	
	Junglewood timber... ...	...	...	2,784	2,784	...	2,784	—	...	
	Do. rafters... ...	...	...	200	200	...	...	200	...	
	Firewood ... C. feet.	...	...	81,184	81,184	74,340	6,844	...	...	
Poona.	Teak rafters...	...	...	136,433	136,433	136,348	...	85	...	
	Do. firewood. C. feet.	...	...	64,662	64,662	62,462	...	2,200	...	
	Firewood ...C. ft. stacked	...	170,700 C. feet.	29,380 Pieces.	200,080	170,700 C. feet.	* 29,380 *Pieces.	...	...	*Dead fallen wood.
	Junglewood logs. ...C. feet	...	59,946	4,848	64,794	59,946	770	4,078	...	
	Bámbus, pieces	169,849	...	...	169,849	...	169,849	...	...	
Sátára.	Teak trees	...	4,797	...	4,797	4	4,793	...	...	
	Do. rafters...	...	...	48,828	48,828	48,239	309	280	...	
	Junglewood rafters... ...	...	...	14,298	14,298	10,843	3,067	388	...	
	Firewood ... C. feet.	...	...	189,078 Kh. m.	189,078 Kh. m.	174,405 Kh. m.	14,663	10	...	
	Charcoal ... Khandis.	...	—	11 27	11 27	11 27	...	...	...	
	Bámbus ... ... No.	...	...	11,427	11,427	310	11,117	...	...	
	Do. ... Head-loads.	...	...	422	422	60	362	...	...	
Sholápur.	Junglewood logs C. feet.	...	...	1,352	1,352	1,352	...	...	...	
	Sandalwood trees ... No.	...	324	...	324	..	324	...	...	
	Firewood ... C. feet.	...	...	18,172 Kh. m.	18,172 Kh. m.	16,718	... Kh. m.	..	...	1,454 cubic feet unsold.
	Do. ... Khandis.	...	...	11 14	11 14	...	11 14	...	...	
Surat.	Teak green ... Khandis.	4,662	...	...	4,662	2,272	2,390	...	...	
	Do. dry ... Do.	...	1,175	...	1,175	1,175	...	...	...	
	Do. green pieces	...	...	170	170	...	170	...	...	
	Do. rafters	48,510	...	24	48,534	48,510	...	24	...	
	Do. beams, pieces	3,243	240	3	3,486	3,243	240	3	..	
	Do. sleepers, pieces. ...	1,850	...	...	1,850	1,850	...	...	...	
	Do. logs ... Khandis.	...	62	...	62	...	62	..	...	
	Tanach ... Do. ...	139	...	...	139	...	139	...	...	
	Tanach pieces	19	...	...	19	...	19	...	...	
	Kheir ... ... Khandis.	681	...	8	689	...	681	8	...	
	Do. pieces	...	1	...	1	...	1	...	...	
	Haldwan ... Khandis.	370	... Pieces.	... Khandis.	370	...	370 Pieces.	... Kh.	...	
	Beo pieces, &c. Do. ...	...	2	8	10	...	2	8	...	
	Sadada pieces	2,440	1	...	2,441	...	2,441	...	...	
	Sisu pieces	...	1	...	1	...	1	...	...	
	Junglewood pieces	40,187½	...	8½	40,196	...	40,187½	8½	...	
	Do. dandi	200	...	...	200	...	200	...	...	
	Firewood ... Khandis.	5,078	...	...	5,078	...	5,078	...	...	
	Bámbus ... ... No.	538,002	...	1,325	539,327	...	538,002	1,325	...	
	Do. ... Cart-loads.	17	...	..	17	...	17	...	—	
	Do. ... Head-loads.	1,088	...	..	1,088	...	1,088	..	...	
Panch Mahals.	Teak pieces	...	82	47,930	48,012	815	47,002	88	...	Balance 107.
	Do. poles	...	277	12,225	12,502	1,075	11,146	...	...	Do. 281.
	Do. rafters...	...	1,483	142,520	144,003	18,359	102,538	4,624	...	Do. 18,482.
	Do. gazas of 10½ C. feet.	...	...	$23\frac{13}{16}$	$23\frac{13}{16}$	...	$8\frac{5}{16}$	$15\frac{1}{2}$	...	
	Do. ... ... Cart-loads.	...	...	5	5	...	...	5	...	
	Junglewood pieces	...	252	387	639	192	167	24	...	Do. 256.
	Do. rafters... ..	...	...	578	578	37	145	396	...	
	Do. gazas of 10½ C. feet.	...	...	$1\frac{3}{4}$	$1\frac{3}{4}$	...	..	$1\frac{3}{4}$	...	
	Firewood ... C. feet.	...	71,424	114,762 Kh. m.	186,186 Kh. m.	34,890	... Kh. m.	...	...	Do. 151,296.
	Do. ... Khandis.	...	...	3,347 2½	3,347 2½	...	3,347 2½	...	...	
	Do. ... Cart-loads.	...	...	1,970½	1,970 ½	81½	1,889	...	...	
	Do. ... Head-loads.	...	...	129	129	77	52	...	...	
	Charcoal	...	...	140	140	...	140	...	...	
	Bámbus ... ... No.	...	...	162,291	162,291	80	162,123	88	...	
	Do. ... Head-loads.	...	...	7	7	7	...	...	...	
	Canes	...	...	10,582	10,582	...	10,582	..	...	
	Do. ... Cart-loads.	...	—	5	5	...	5	...	...	
	Do. ... Head-loads.	...	...	2	2	...	2	...	...	

Dated Poona, 31st October 1889.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 55.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Outturn of Minor Forest Produce.

Division.	Description of Produce.	PRODUCE REMOVED OR UTILIZED.									
		By Government Agency.		By Purchasers.		By Free Grants.		By Right-holders.		Total.	
		Quantity.	Value.	Quantity.	Value.	Quantity	Value.	Quantity.	Value.	Quantity.	Value.
			Rs.		Rs.		Rs.		Rs.		Rs.
North Thána.	Apta, temburni, pallas and brab tree leaves	..	..	....	3,118	..	..	....	..	..	3,118
	Shembi and ain bark Khandis.	61	61	....	85	..	..	....	..	61	146
	Bhâwá pods	..	..	....	10	..	..	....	..	....	10
	Brab tree fruits	..	..	....	103	..	..	....	..	....	103
	Gums	..	..	....	795	..	..	....	..	....	795
	Stones, &c. .. .. Cart-loads.	..	..	205	57	..	..	....	..	205	57
	Karvi .. .. Do.	..	..	1,553	403	..	..	....	..	1,553	403
	Do. .. .. Head-loads.	..	..	1,307	41	..	..	....	..	1,307	41
	Myrabolans .. Khandis.	109	1,727	....	..	..	..	....	..	109	1,727
	Ráb material .. Cart-loads.	..	..	81	6	..	..	....	..	81	6
	Total ..	..	1,788	....	4,618	..	..	....	..	....	6,406
South Thána.	Hirda .. .. Khandis.	265	4,407	....	..	..	..	....	..	265	4,407
	Karvi .. .. Cart-loads.	..	..	1,180	357	..	..	....	..	1,180	357
	Do. .. .. Head-loads.	46	3	578	19	..	..	....	..	624	22
	Palm, teak, apta and temburni leaves	490	1	....	40	..	..	....	..	490	41
	Apta, temburni and chelari bark	..	..	....	1,836	..	..	....	..	....	1,836
	Gums	..	..	....	47	..	..	....	..	....	47
	Thorns .. .. Cart-loads.	..	..	5	5	..	..	....	..	5	5
	Do. .. .. Head-loads.	..	..	9	1	..	..	....	..	9	1
	Stones .. .. Cart-loads.	..	..	15	6	..	..	....	..	15	6
	Mowra flowers	..	..	....	63	..	..	....	..	....	63
	Dead palm trees &c.	..	..	16	1	..	..	....	..	16	1
	Grass bundles	13	1	....	..	..	..	....	..	13	1
	Total ..	..	4,412	....	2,375	..	..	....	..	....	6,787
East Khándesh.	Stones .. .. Cart-loads.	..	..	1,647	267	..	..	....	..	1,647	267
	Limestones .. Do.	..	..	164	20	..	..	....	..	164	20
	Thorns .. .. Do.	..	..	820	92	..	..	....	..	820	92
	Roshagrass stills .. .. No.	..	..	4	56	..	..	....	..	4	56
	Mango fruits	..	..	....	12	..	..	....	..	....	12
	Manure	..	..	....	19	..	..	....	..	....	19
	Damages for anjan leaves and thorns, &c.	..	..	....	76	..	..	....	..	....	76
	Total ..	..	..	....	542	..	..	....	..	....	542
West Khándesh.	Roshagrass stills .. .. No.	..	..	154	7,780	..	..	....	..	154	7,780
	Grass .. .. Cart-loads.	..	..	55,429	6,929	..	..	....	..	55,429	6,929
	Grazing by fee system ..	..	..	....	47,908	..	..	....	..	....	47,908
	Reeds and karvi .. Cart-loads.	..	..	1,115	159	..	..	....	..	1,115	159
	Thorns .. .. Do. ..	..	..	946	130	..	..	....	..	946	130
	Earth .. .. Do. ..	..	..	1,210	151	..	..	....	..	1,210	151
	Manure .. .. Do. ..	..	..	938	168	..	..	....	..	938	168
	Anjan leaves .. Do. ..	58	10	....	..	..	..	....	..	58	10
	Tarwad bark	..	..	....	18	..	..	....	..	....	18
	Mango fruits	..	..	....	127	..	..	....	..	....	127
	Stones .. .. Cart-loads.	..	..	2,501	338	..	..	....	..	2,501	338
	Total ..	..	10	....	63,708	..	..	....	..	....	63,718
Násik.	Stones .. .. Cubic feet.	..	..	17,876	78	..	..	....	..	17,876	78
	Do. .. .. Cart-loads	..	..	20	2	698	40	....	..	718	42
	Tarwad bark.	..	..	....	82	..	..	....	..	....	82
	Manure .. .. Cart-loads.	..	..	299	103	..	..	....	..	299	103
	Karvi .. .. Head-loads.	..	..	5,163	81	..	..	....	..	5,163	81
	Do. .. .. Cart-loads.	..	..	252	8	..	..	....	..	252	8
	Cart-loads and head-loads of ráb material	..	..	30	10	..	..	....	..	30	10
	Thorns .. .. Cart-loads.	..	..	87	25	..	..	....	..	87	25
	Do. .. .. Head-loads.	..	..	74	5	..	..	....	..	74	5
	Do. .. Bullock-loads.	..	..	86	15	..	..	....	..	86	15
	Grass oil furnaces .. No.	..	..	54	636	..	..	....	..	54	636
	Earth .. .. Cubic-feet.	..	..	1,200	1	..	..	....	..	1,200	1
	Anjan, temburni and apta leaves	..	..	....	327	..	..	....	..	....	327
	Bricks and tiles .. .. No.	..	..	30,000	15	..	..	....	..	30,000	15
	Grass and grazing by auction	..	..	....	16,888	..	..	....	..	....	16,888
	Grazing by fee system	..	..	....	25,524	..	..	....	..	....	25,524
	Fruits	..	..	....	13	..	..	....	..	....	13
	Total ..	..	..	....	43,813	..	40	....	..	....	43,853
Ahmednagar.	Hirda	..	2,056	....	..	..	..	....	..	....	2,056
	Stones .. .. Cart-loads.	..	..	6,570	475	..	..	....	..	6,570	475
	Karvi	..	..	889	28	..	..	....	..	889	28
	Fruits	..	..	....	162	..	..	....	..	....	162
	Turwad	..	..	....	672	..	..	....	..	....	672
	Manure .. .. Cart-loads.	..	..	35	20	..	..	....	..	35	20
	Earth .. .. Do. ..	..	..	140	15	..	..	....	..	140	15
	Damages to leaves	..	..	....	32	..	..	....	..	....	32
	Miscellaneous	..	..	....	14	..	..	....	..	....	14
	Total ..	..	2,056	....	1,418	..	..	....	..	....	3,474

FORM No. 55—*continued.*

Division.	Description of Produce.	Produce removed or utilized.									
		By Government Agency.		By Purchasers.		By Free Grants.		By Right-holders.		Total.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			Rs.		Rs.		Rs.		Rs.		Rs.
Poona.	Hirda .. .. .. Khandis.	272	3,538	....	..	..	..	....	..	272	3,538
	Grass and grazing	..	..	....	52,355	..	85,000	....	..	....	1,37,355
	Karvi	..	..	....	489	..	..	....	..	....	489
	Tarwad	..	..	....	1,826	..	..	....	..	....	1,826
	Stones and earth	..	..	....	212	5,808	1,487	....	..	5,808	1,699
	Fruits	..	..	....	145	..	..	....	..	....	145
	Rāb	..	..	....	..	..	725	....	..	....	725
	Miscellaneous	..	..	....	129	..	..	....	..	....	129
	Total ..	..	3,538	....	55,156	..	87,212	....	..	....	1,45,906
Sātāra.	Grass and grazing	..	..	....	40,500	..	..	....	..	....	40,500
	Hirda .. .. .. Khandis.	288	13,917	....	201	..	..	....	..	288	14,118
	Shikakai	54	1,398	....	683	..	..	....	..	54	2,081
	Stones .. .. ..Cart-loads.	..	..	12,654	804	..	..	....	..	12,654	804
	Earth .. .. .. Do. ..	..	..	161	28	..	..	....	..	161	28
	Aloe leaves .. ..Head-loads.	..	..	249	5	..	..	....	..	249	5
	Creepers .. .. Do. ..	..	..	69	7	..	..	....	..	69	7
	Thorns .. .. Do. ..	..	..	16,815	1,124	..	..	....	..	16,815	1,124
	Tarwad .. .. Do. ..	..	..	15,385	1,158	..	..	....	..	15,385	1,158
	Mango and Jack fruits	..	..	6,470	14	..	..	....	..	6,470	14
	Karanj pods	..	..	6	3	..	..	....	..	6	3
	Kawal .. .. Head-loads.	..	..	269	17	..	..	....	..	269	17
	Total ..	..	15,315	....	44,544	..	..	....	..	....	59,859
Sholapur.	Bābul bark .. .. Khandis.	8	16	....	..	..	..	....	..	8	16
	Tamarind fruits	..	..	....	7	..	..	....	..	....	7
	Tarwad	..	..	....	500	..	..	....	..	....	500
	Stones .. .. Cart-loads.	..	..	25	13	..	..	....	..	25	13
	Aloe and Sindi trees .. No.	..	..	120	8	..	..	....	..	120	8
	Teak leaves	..	..	....	1	..	..	....	..	....	1
	Total ..	..	16	.....	529	..	..	....	..	....	545
Surat.	Grass and grazing	..	..	....	794	..	..	....	..	.....	794
	Timru and Khakhar leaves Cart-loads.	..	..	99	65	..	..	....	..	99	65
	Ashindra leaves .. Do. ..	..	..	16	32	..	..	....	..	16	32
	Do. do. .. Bundles.	..	..	1,163,275	245	..	..	....	..	1,163,275	245
	Mowra flowers	..	..	972	108	..	..	....	..	972	108
	Bhos Baru, ... Cart-loads.	..	..	392	99	..	..	....	..	392	99
	Honey and wax .. .. Mds.	..	..	274	103	..	..	....	..	274	103
	Bāmbu mats	..	..	4,870	268	..	..	....	..	4,870	268
	Date and palm trees	..	..	78	5	..	..	....	..	78	5
	Earth and kankar .. Cart-loads.	..	..	5	1	..	..	....	..	5	1
	Gum and Lac	..	..	28	11	..	..	....	..	28	11
	Catechu furnaces	..	..	90	5,400	..	..	....	..	90	5,400
	Total ..	..	..	....	7,131	..	..	....	..	....	7,131
Panch Mahāls.	Grass and grazing	..	..	....	5,732	..	..	....	..	....	5,732
	Stones and kankar ..Cart-loads.	..	..	40	20	..	..	....	..	40	20
	Mowra flowers	..	..	....	2,140	..	..	....	..	....	2,140
	Sand .. .. .. Cubic feet.	..	..	12,362	18	..	..	....	..	12,362	18
	Thorns .. .. Cart-loads.	..	..	43	11	..	..	....	..	43	11
	Seed .. .. Mds.	164	165	....	..	..	..	....	..	164	165
	Manure .. .. Cart-loads.	..	..	8	3	..	..	....	..	8	3
	Sāli and wood for Māndvés, &c..	..	..	....	5	..	..	....	..	....	5
	Total ..	..	165	....	7,929	..	..	....	..	....	8,094

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Dated Poona, 31st October 1889.

FORM No. 56.

FOREST DEPARTMEMT, BOMBAY, NORTHERN CIRCLE.

Account of Timber and other Produce cut or collected by Government Agency and brought to Sale Depôts or sold locally during the year 1888-89.

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
TIMBER.				
Balance at commencement of the year.				
North Thána ... Teak logs and rafters ...	643	.....		
North Thána ... Junglewood pieces	616	.....	1,259	
West Khándesh ... Teak pieces	1,062	.....	1,062	
Násik ... ... Teak logs and rafters ...	77,417	.....	77,417	
Sátára ... ... Junglewood do. ...	1,196	.....	1,196	
		Kh. ft. in. p.		
Surat ... ... Teak pieces, green ...	742	1,237 0 0 0		
Surat ... ... Do. do. ...	49,767	.....		
Surat ... ... Sadada do ...	2,438	.....		
Surat ... ... Junglewood do. ...	696	.....		
				Kh. ft. in. p.
			53,643	1,237 0 0 0
Total Balance ..	.....	.....	134,577	1,237 0 0 0
Received from the Forests in Depôts.				
Teak logs and rafters	377,570	.....		
Do. pieces	61,925	.....		
		Kh. ft. in. p.		
Do. green	1,394	2,272 1 1 10		
Jámbul rafters	15,114	.....		
Junglewood rafters	10,843	.....		
Do. pieces	14,255	.....		
Miscellaneous do.	416	.....		

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
Sold locally.				
Teak logs and rafters	405,973	.....		
Do. pieces	105,349	.....		
		Kh. ft. in. p.		
Do. do. green	2,136	3,509 1 1 10		
Jambul rafters	15,028	.....		
Janglewood do.	9,258	.....		
Do. pieces	17,749	.....		
Miscellaneous do.	272	.....		
			555,765	Kh. ft. in. p. 3,509 1 1 10
Sold from Depôt.				
Junglewood rafters	65	.....	65	
Free grant.				
Teak rafters	13,986	.....		
Do. pieces	361	.....	14,347	
Used by the Department.				
Junglewood rafters	2,106	.....	2,106	
			572,283	3,509 1 1 10
Balance at the close of the year.				
North Thána ... Teak logs and rafters ...	2,204	.....	2,204	
West Khándesh ... Do. do. ...	9,561	.....		
West Khándesh ... Do. pieces ...	4,737	.....	14,298	
Násik ... .. Teak logs and rafters ...	5,424	.....	5,424	

			481,517	2,272 1 1 10
Total ...	.....	.....	616,094	3,509 1 1 10

FIREWOOD.

Balance at commencement of the year.		Kh. m. lbs.		Kh. m. lbs.
North Thána ... Firewood	.....	33 0 0		33 0 0
South Thána ... do.	.....	4,642 18 0		4,642 18 0
West Khándesh ... do.	.....	60 0 0		60 0 0
Násik ... ... do.	.....	1,148 0 0		1,148 0 0
Sátára ... ... do.	.....	545 13 0		
Sátára ... ... Charcoal...	.....	12 7 0		557 20 0
Surat ... ... Firewood	Cart-loads. 1,004 Tons. 188	434 0 0	Cart-loads. 1,004 Tons. 188	434 0 0
Received from the Forests in Depôts.			1,192	6,875 10 0
Firewood ... ... Khandis.	.....	86,783 7 0		
Do. ... ...Cubic feet.	.....	Kh. 1,025,218		
Do. ... ...Cart-loads.	81½	.....		
Do. ... ...Head-loads	77	.....		
Do. ... ... Pieces.	174	.....	332½	1,112,001 7 0
Total ...	.....	.....	1,524½	1,118,876 17 0

Ahmednagar ... Jámbul rafters	86	.....	86	
Sátára ... ... Junglewood rafters ...	610	.....	610	
Surat ... ... Teak pieces	1,919	.....		
Surat ... ... Miscellaneous pieces ...	144	.....	2,063	
Panch Maháls ... Teak pieces	388	.....		
Panch Maháls ... Do. rafters	18,482	.....		
Panch Maháls ... Junglewood pieces ...	256	.....	19,126	
Total Balance ...	.....	.....	43,811	.....
Total ...	.....	.....	616,094	3,509 1 1 10

Sold locally.				
Firewood ... ... Khandis.	.....	84,921 10 0		
Do. ... ...Cubic feet.	.....	612,341 0 0		
Do. ... ...Cart-loads.	1,085½	.....		
Do. ... ...Head-loads	77	.....		
Do. ... ... Tons.	188	.....		
Do. ... ... Pieces.	174	.....	1,524½	697,262 10 0
Sold from Depôt.				
Firewood ... ... Khandis.	.....	1,367 24 0		
Charcoal ... ... Do.	.....	11 27 0	.....	1,379 23 0
Free grant.				
Firewood ... ...Cubic feet.	.....	3,750 0 0	.....	3,750 0 0
			1,524½	702,392 5 0
Balance at the close of the year.				
North Thána ... Firewood ... Khandis.	.....	35 0 0	.....	35 0 0
South Thána ... Do. ... Do.	.....	4,642 18 0	.....	4,642 18 0
West Khándesh ... Do. ...Cubic feet.	.....	230,425 0 0	.....	230,425 0 0
Násik ... ... Do. ... Do.	.....	27,406 0 0	.....	27,406 0 0
Násik ... ... Do. ... Khandis.	.....	1,000 0 0	.....	1,000 0 0
Sátára ... ... Do. ... Do.	.....	225 14 0	.....	225 22 0
Sátára ... ... Charcoal ... Do.	.....	0 8 0		
Sholápur ... ... Firewood ... Do.	.....	1,454 0 0	.....	1,454 0 0
Panch Maháls ... Do. ...Cubic feet.	.....	151,296 0 0	.....	151,296 0 0
Total Balance ...	.....	.....	.....	Kh., m. lbs. 7,357 12 0 C. ft. 409,127
Total ...	.....	.....	1,524½	1,118,876 17 0

FORM No. 56—*continued.*

BA'MBUS.

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
Balance at commencement of the year.				
Sátára Bámbus	255	.....	255	.....
Received from the Forests in Depôts.				
Bámbus	2,565	.....	.....	.....
Do. ... ...Head-loads...	98	.....	2,663	.....
Total ...	.....	.....	2,918	.....

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
Sold locally.				
Bámbus	2,255	.....	.....	
Do. ... ...Head-loads...	38	.....	2,293	
Sold from Depôt				
Bámbus	565	.....	565	
Used by the Department.				
Bámbu ... ... Head-loads...	60	.....	60	
Balance at the close of the year ...	.....	.....	2,918	
Total ...	.....	.....	2,918	

OTHER MINOR PRODUCE.

Particulars.			Number or Quantity.	Cubic Feet. K. m. lbs.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet. K. m. lbs.
Balance at commencement of the year.						
North Thána ...	Ain bark	...Khándis ...	.....	51 0 0	.....	51 0 0
South Thána...	Hirda ...	... Do ...	.....	2 15 6		
	Seed ...	... Do ...	.....	4 19 12		
						7 6 18
Násik	Hirda ...	... Do ...	.....	4 9 0	.....	4 9 0
Ahmednagar ...	Seed ...	... Do ...	.....	45 1 15	.....	45 1 15
Sátára ...	Hirda	... Do ...	.....	141 6 2¾	.....	223 9 3¾
	Skikakai	... Do ...	.....	49 12 0		
	Seed	... Do ...	.....	32 19 11		
Surat	Bábul thorn	...Cart-load ...	1	.....	1	.....
Panch Maháls .	Seed ...	... ...		0 27 0	.....	0 27 0
					1	331 25 18¾

Particulars.	Number or Quantity.	Cubic Feet. K. m. lbs.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet. K. m. lbs.
Sold locally.				
Aim bark	.....	53 21 0		
Babul do	.....	8 2 0		
Hirda	.....	991 22 23¼		
Shikakai	.....	49 12 0		
Thorn ... ...Cart-loads ...	2	.....		
Apta leaves ... ...Bundles ...	490	.....		
Temburni leaves ... ...Cart-loads ..	1	.....		
Karvi ... ...Head-loads...	46	.....		
Grass ... ...Bundles ...	13	.....		
Anjan leaves ... . Cart-loads ...	58	.....		
			610	1,103 1 23¼

Received from the Forests in Depôts.				*Used by the Department.*				
Ain bark	.....	4 0 0		Hirda	.....	4 9 0		
Bábul abrk...	.....	8 2 0		Seed	.....	303 14 9		
Hirda	.....	1,045 12 5		Thorn ... ...Head-loads...	66	.....	66	307 23 9
Seed...	.....	368 27 9		*Lost or written off.*				
Apta leaves... ... ...Bundles ...	490	.....		Hirda	.....	47 9 0	.....	47 9 0
Temburni leaves ... ...Cart-loads ...	1	.....					676	1,458 6 4½
Karvi ... ...Head-loads...	46	.....		*Balance at close of the year.*				
Grass ... ...Bundles ...	13	.....		North Thána... ... ... Ain bark ...	.....	1 7 0	.....	1 7 0
Anjan leaves ... ...Cart-loads ...	58	.....		South Thána ... ... Hirda... ...	.....	8 5 16	.....	41 16 19
Teak leaves ... ...Bundles ...	31	.....		Seed	.....	33 11 3		
Thorn ... ...Head-loads...	66	.....		West Khándesh ...Teak leaves, Bundles...	31	.....	31	
Do ... ...Cart-loads ...	1	.....		Ahmednagar ... ... Seed	.....	25 23 26	.....	25 23 26
			706	1,426 13 14	Poona ... ... Hirda ...	.....	0 19 0	.....	0 19 0
					Sátára... ... ... Hirda ...	.....	141 5 2½	.....	229 1 10½
					Seed ...	.....	87 24 8		
					Panch Mahals ... ... Do. ...	.....	1 21 1	.....	1 21 1
					Total Balance ...	.....	.....	31	300 5 0½
Total ...	.....	.....	707	1,758 11 4½	Total ...	.....	.....	707	1,758 11 4½

Dated Poona, 31st October 1889.

A. T. SHUTTLEWORTH,
Conservater of Forests, Northern Circle.

FORM No. 57.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Abstract showing the Value of Timber and other Produce at Sale Depôts for the year 1888-89.

Description of Timber and other produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.		Remarks.
	No.	Khandis.	Value.	No.	Khandis.	Value.	In favour of the year.	Against the year.	
North Thána Division.		K. m. s.	Rs.		K. m. s.	Rs.	Rs.	Rs.	
Teak pieces	643	.....	300	2204	.....	2,000	...	...	
Jungle wood pieces ...	616	.....	200	...	.....	...	...	...	
Firewood	...	33 0 0	17	...	35 0 0	17	...	...	
Ain bark	...	50 0 0	50	...	1 1¼	1	...	...	
Total ...	...	.....	567	...	.....	2,018	1,451	...	
South Thána Division.									
Hirda nuts	...	2 15 6	30	...	8 5 16	136	...	...	
Miscellaneous seeds ...	...	4 19 12	...	...	33 11 3	...	...	...	
Total ...	...	.....	30	...	.....	136	106	...	
East Khándesh Division.									
Seeds	...	6 20 2	...	...	10 14 1	...	...	...	
Total ...	...	.....	...	...	.....	...	...	...	
West Khándesh Division.									
Teak logs	...	.....	...	1,767	.....	5,163	...	...	
Do. rafters	...	.....	...	7,804					
Do. pieces	1,062	.....	106	4,737					
Fuel	...	60 khs. Cub. ft. 3,000	26	...	Cub. ft. 230,425	4,608	...	...	
Teak leaves ... Bundles ...	...	.....	...	31	.....	2	...	...	
Total ...	...	.....	132	...	.....	9,773	9,641	...	
Nasik Division.									
Teak rafters	77,417	.....	30,800	30	.....	1,627	...	...	
				5,394					
Firewood	...	1,148 0 0	570	...	1,000 Cub. ft. 27,406	800	...		
Hirda	..	4 9 0	50	...	.....	...	...	...	
Total ...	...	.....	31,420	...	.....	2,427	...	28,993	
Ahmednagar Division.									
Seeds	...	45 1 15	...	...	25 23 26	...	...	...	
Jambul rafters	...	.....	...	86	.....	3	...	...	
Total ...	...	.....	...	...	.....	3	3	...	
Poona Division.									
Hirda	...	.....	...	...	Mds. 19	10	...	...	
Total ...	...	.....	...	...	.....	10	10	...	

FORM No. 57—*continued.*

Description of Timber and other produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.		Remarks
	No.	Khandis.	Value.	No.	Khandis.	Value.	In favour of the year.	Against year.	
		K. m. s.	Rs.		K. m. s.	Rs.	Rs.	Rs.	
Sátára Division.									
Teak trees				4		5			
Firewood		545 13 0	500		225 14 0	200			
Charcoal		12 7 0	70		0 8 0	4			
Bámbus	255		5						
Hirda		141 6 2¾	500		141 5 2½	500			
Shikákai		49 12 0	325						
Seeds		32 19 11			87 24 8				
Junglewood rafters	1,196		200	611		125			
Total			1,600			834		766	
Sholápur Division.									
Firewood					Cub. ft. 1,454	39			
Total						39	39		
Surat Division.									
Teak pieces	46,245		18,825	2,063		1,200			
Sadada pieces	2,438		400						
Rájaloo do.	696								
		Tons.							
Firewood		180	900						
		Khandis.							
Teak firewood		550	100						
Jungle firewood		886							
Teak timber		1,237	6,185						
Bámbu				134		2			
Total			26,410			1,202		25,208	
Panch Mahál Division.									
Teak poles and pieces				388		250			
Teak rafters				18,482		800			
Junglewood pieces				256		10			
					Cub. ft.				
Firewood					151,296	2,000			
		K. m. s.			K. m. s.				
Seeds		0 38 16	27		0 49 12	50			
Total			27			3,110	3,083		

Net difference against the year Rs. 40,646

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Dated Poona, 31st October 1889.

FORM No. 57A.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Abstract showing the Value of Live and Dead Stock for the year 1888-89.

Description of Live and Dead Stock.	On hand at commencement of the year.		On hand at close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.	
		Rs.		Rs.	Rs.	Rs.	
North Thána.							
Parol bungalow	1	1,200	1	1,200	...	...	
Náka house at Mándvi	1	250	1	250	...	...	
Do. at Mánikpur	1	603	1	603	...	...	
Forest stations	38	570	38	570	...	...	
Do. posts	82	840	82	840	...	...	
Office tent	1	273	1	273	...	...	
Great-coats...	226	1,359	226	1,359	...	...	
Tools, plant and office furniture ...	...	2,774	...	2,774	...	...	
Total ...	...	7,869	...	7,869	...	...	
South Thána.							
Office tent	1	273	2	273	...	...	
Small rowties	2	186		186	...	...	
Great-coats...	263	1,713	263	1,713	...	...	
Tools, plant and office furniture ...	...	581	...	808	...	...	
Total ...	...	2,753	...	2,981	228	...	
East Khándesh.							
Office tent	1	248	1	248	...	...	
Great-coats	192	1,254	192	1,254	...	...	
Tools, plant and office furniture ...	...	560	...	648	...	...	
Total ...	...	2,062	...	2,150	88	...	
West Khándesh.							
Great-coats	219	1,428	219	1,428	...	...	
Tools, plant and office furniture ...	...	1,054	...	4,676	...	...	
Total ...	...	2,482	...	6,104	3,622	...	
Násik.							
Office tents	2	300	2	300	...	...	
Great-coats...	592	1,976	592	1,976	...	...	
Tools, plant and office furniture ...	...	258	...	258	...	...	
Total ...	...	2,534	...	2,534	...	...	
Ahmednayar.							
Sleeping pál 12″ × 12′, double fly...	1	246	1	246	...	...	
Office room, Range Forest Officer, Karjat	1	214	1	214	...	..	
Hirda depôt, Singanvádi	1	25	1	25	...	...	
Forest rest-houses...	3	90	3	90	...	...	
Great-coats...	208	1,357	208	1,357	...	...	
Tools, plant and office furniture ...	...	2,074	...	986	...	...	
Total ...	...	4,006	...	2,918	...	1,088	

FORM No. 57A—*continued.*

Description of Live and Dead Stock.	On hand at commencement of the year.		On hand at close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.	
		Rs.		Rs.	Rs.	Rs.	
Poona.							
Office tent	1	273	1	273	...	...	
Range Forest Officers' offices ...	5	7,752	5	7,752	...	...	
Great-coats	1,371	3,655	1,371	3,655	...	...	
Tools, plant and office furniture ...	...	345	...	410	...	...	
Total ...	...	12,025	...	12,090	65	...	
Stára.							
Bungalow at Málcolmpeth ...	1	700	1	700	...	...	
Pál with double fly	1	245	1	245	...	...	
Great-coats	246	1,606	244	1,708	...	...	
Tools, plant and office furniture ...	...	742	...	825	...	...	
Total ...	...	3,293	...	3,478	185	...	
Sholápur.							
Office tent	1	100	1	100	...	...	
Great-coats	119	777	119	777	...	...	
Tools, plant and office furniture ...	...	231	...	231	...	...	
Total ...	...	1,108	...	1,108	...	...	
Surat.							
Office tent, 12 feet	1	246	1	246	...	...	
Andhatri bungalow	1	291	1	291	...	...	
Dhadahvada bungalow	1	30	1	80	...	...	
Tárápur do.	...	...	1	100	...	...	
Large Waghai do.	2	1,099	2	1,099	...	...	
Small do. do.							
Large Pimpri do.	1	499	1	499	...	...	
Do. Garvi do.	1	1,012	1	1,012	...	...	
Small do. do.	1	288	1	288	...	...	
Great-coats	67	438	73	484	...	...	
Tools, plant and office furniture ...	...	917	...	2,204	...	...	
Total ..	...	4,820	...	6,057	1,237	...	
Panch Mahál.							
Rest-houses and depôts	30	2,250	34	2,410	...	...	
Bungalow	1	8,200	1	8,200	...	...	
Office rowti with carpets	1	273	1	273	...	...	
Great-coats	110	717	110	717	...	...	
Tools, plant and office furniture ...	...	956	...	924	...	...	
Total ...	...	12,396	...	12,524	128	...	
Working Plans.							
Office tent	1	285	1	285	...	...	
Tools, plant and office furniture ...	...	1,086	...	1,086	...	...	
Total ..	...	1,371	...	1,371	...	...	

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

Dated Poona, 31st October 1889.

FORM No. 5-.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Summary of Revenue and Expenditure of the different Divisions to the year ending 1888-89.

Budget Heads.	Direction.	Ahmednagar Division.	East Khandesh Division.	West Khandesh Division.	Nasik Division.	Panch Mahals Division.	Poona Division.	Sátára Division.	Sholapur Division.	Surat Division.	North Thana Division.	South Thana Division.	Working Plans Division.	Total.
REVENUE.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other produce removed from the Forests by Government Agency—														
a. Timber	....	7,336 0 11	7,721 15 10	20,239 7 9	29,356 2 6	1,078 14 0	27,698 10 0	16,491 3 8	173 4 0	41,589 5 4	14,771 6 2	7,605 1 0	....	1,74,381 7 2
b. Firewood and charcoal	....	1,294 3 9	16,101 2 0	2,599 9 0	2,917 11 0	739 2 0	10,939 12 0	4,000 11 9	1,134 0 6	302 8 10	9,183 7 0	2,646 7 6	....	45,778 11 4
c. Bámbus	....	....	....	....	....	....	....	6 1 4	....	....	1 4 0	....	....	7 5 4
d. Sandalwood	....	....	....	....	....	....	....	....	....	....	....	....	....	....
e. Grass and other minor produce	....	2,056 8 10	....	7 0 0	0 1 0	37 8 0	3,538 7 10	15,315 8 0	16 2 6	....	1,389 1 6	4,319 11 1	....	27,080 0 9
II.—Timber and other produce removed from the Forests by consumers or purchasers—														
a. Timber	....	217 0 2	3,771 7 3	14,395 4 9	9,192 14 6	33,927 2 2	129 10 9	4,051 15 0	290 2 3	35,744 7 9	1,58,391 13 9	1,67,316 2 8	....	4,22,428 1 0
b. Firewood and charcoal	....	641 4 2	7,220 13 6	3,880 3 0	1,490 1 7	932 1 0	1,673 1 6	413 11 9	51 10 9	1,523 13 2	8,635 13 7	1,198 6 11	....	27,661 0 11
c. Bámbus	....	342 5 1	3,718 9 6	2,562 7 4	4,004 3 9	2,026 5 9	1,752 14 6	282 2 1	....	12,237 0 5	11,892 12 5	3,543 6 9	....	42,362 3 7
d. Grazing and fodder grass	....	40,864 6 4	46,371 14 6	54,870 1 10	43,292 12 9	5,732 9 6	52,354 9 0	40,499 12 6	21,768 10 4	794 11 0	13,316 3 0	7,299 2 8	....	3,27,164 13 5
e. Other minor produce	....	1,416 13 1	542 7 0	9,300 2 0	1,726 7 2	2,196 10 2	2,913 3 6	4,043 12 0	529 10 0	6,349 5 7	4,665 15 6	2,375 9 6	....	36,059 15 6
III.—Confiscated, drift, and waif wood	....	93 14 11	150 2 9	666 11 4	110 2 2	146 8 9	169 3 2	117 4 9	20 6 6	247 0 2	1,643 10 7	1,646 12 2	....	4,911 13 3
IV.—Revenue from Forests not managed by Government—														
a. Duty on foreign timber and other forest produce	....	....	13,550 15 0	1,8307 0 6	117 12 3	....	....	....	....	....	....	....	....	31,975 11 9
b. Revenue from shared and private forests	....	....	....	....	....	400 0 0	314 4 7	....	....	91 0 10	1.682 2 9	1,100 0 6	....	3,587 8 8
V.—Miscellaneous—														
a. Fines and forfeitures	....	....	....	....	223 14 0	70 0 4	350 9 7	45 4 7	....	....	101 0 0	4,558 9 6	....	5,349 6 0
b. Refunds	68 7 11	21 0 2	70 15 0	0 1 0	161 3 7	....	4 12 1	7 10 0	11 13 2	....	112 14 0	26 7 4	....	485 4 4
c. Other sources	35 8 0	862 6 5	408 5 7	1,344 6 1	786 8 11	1,136 10 3	70 1 8	81 1 0	651 3 2	628 7 2	4,691 5 6	859 1 8	....	11,555 1 5
Total Revenue	103 15 11	55,145 15 10	93,628 12 0	1,28,172 6 7	93,379 15 2	48,283 7 11	1,01,909 4 2	85,356 2 5	24,646 15 2	99,807 12 3	2,25,878 13 9	2,04,454 15 3	....	11,60,768 8 5
EXPENDITURE.														
A.—CONSERVANCY AND WORKS.														
I.—Timber and other produce removed from the Forests by Government Agency—														
a. Timber	....	1,437 6 0	903 11 11	3,251 0 0	1,665 2 6	426 3 3	2,923 12 11	1,797 4 11	15 0 0	3,552 7 7	4,401 8 9	2,344 5 2	....	22,727 15 0
b. Firewood and charcoal	....	2 3 10 0	2,739 1 0	1,729 7 6	1,073 9 0	658 11 5	2,429 11 3	1,900 3 3	144 8 5	....	1,390 1 0	844 14 6	....	13,113 13 8
c. Bámbus	....	....	....	....	....	....	....	....	....	0 6 8	....	....	....	0 6 8
d. Sandalwood	....	....	....	....	....	....	....	....	....	....	....	....	....	....
e. Grass and other minor produce	....	2,258 9 3	....	....	56 5 8	12 8 0	1,360 4 6	6,027 2 4	2 0 0	50 0 0	691 14 4	1,841 0 3	....	12,299 12 4
II.—Timber and other produce removed from the Forests by consumers or purchasers—	....	886 1 9	2,252 11 0	3,683 5 11	1,656 11 6	528 0 8	1,191 8 3	2,242 13 11	....	2,949 14 8	5,159 7 3	3,283 4 9	....	23,833 15 3
III.—Confiscated, drift, and waif wood	....	31 14 5	0 12 6	19 15 5	17 7 0	2 3 0	0 8 0	1 3 2	0 2 8	2 ..	27 7 6	16 8 0	....	120 8 5

IV.—Revenue from Forests not managed by Government—															
a. Duty on foreign timber and other forest produce	....	....	2,373 8 1	1,643 0 6	....	....	....	....	....	....	....	....	....	4,016 8 7
b. Revenue from shared and private forests	....	....	309 5 4	....	....	....	855 12 9	....	....	....	....	....	....	1,165 2 1
V.—Rent of Leased Forests and payments to Shareholders in Forests managed by Government	....	198 0 2	....	....	....	....	1,853 10 1	4,412 14 5	....	13,021 15 11	....	7 6 5	....	18,093 15 0
VI.—Live Stock, Stores, Tools and Plant—														
a. Purchase of Cattle	....	....	....	....	....	....	....	....	....	....	....	....	....	....
b. Feed and keep of Cattle	....	....	....	....	....	....	....	....	....	....	....	....	....	....
c. Stores, Tools and Plant	....	29 15 0	45 0 0	64 14 2	....	14 0 3	14 12 0	4 13 6	....	201 3 9	56 0 0	25 1 0	....	455 11 8
VII.—Communications and Buildings—														
a. Roads and Bridges	....	48 9 0	....	....	....	....	....	96 3 6	....	594 3 7	....	....	....	739 0 1
b. Buildings	....	1 0 0	291 11 0	893 4 5	3 0 0	252 1 6	....	95 6 0	....	440 2 2	678 14 0	411 5 6	....	3,066 12 7
c. Other Works	....	12 0 0	....	....	....	....	....	....	....	....	....	....	....	12 0 0
VIII.—Demarcation, Improvement and Extension of Forests—														
a. Demarcation	....	2,194 2 6	800 7 0	5,034 3 4	3,624 2 2	1,400 10 0	5,316 12 6	1,010 15 7	1,326 8 0	389 8 3	2,739 3 2	....	1,169 0 2	25,005 8 8
b. Compensation for Land and Rights	....	2,606 12 10	5,999 8 0	....	....	....	328 0 0	376 7 0	....	....	187 14 0	22,514 10 8	....	32,013 4 6
c. Surveys and Working Plans	1,000 8 3	386 5 0	152 3 9	128 0 0	18,349 14 7	349 0 4	7,823 1 1	8,559 3 11	330 14 9	0 8 0	826 15 8	10,943 13 9	16,936 9 7	65,787 2 8
d. Plantations	....	884 1 1	283 14 2	279 1 1	2,740 12 2	127 2 7	1,332 12 2	859 10 11	1,306 1 11	11 0 0	1,172 15 3	679 13 7	....	10,177 4 11
e. Protection from Fire	....	....	22 6 0	44 13 9	35 14 3	....	0 13 0	14 14 9	....	....	1,105 9 0	472 15 3	....	1,697 6 0
f. Other Works	....	517 13 6	....	12 9 0	8 2 0	....	313 5 4	288 10 2	894 15 3	....	287 12 5	7 4 0	....	2,330 7 8
IX.—Miscellaneous—														
a. Refunds	....	....	....	....	....	....	....	....	....	....	....	....	....	....
b. Law Charges	....	0 6 9	....	....	....	....	472 7 11	....	....	....	....	842 15 2	....	1,315 13 10
c. Other Charges	....	111 5 9	118 13 0	298 10 1	298 3 0	....	149 8 3	1,005 6 0	1 14 0	860 9 8	113 10 0	5 14 0	....	2,963 13 9
Total A. Conservancy and Works	1,000 8 3	11,808 1 0	16,293 0 3	17,082 5 2	29,529 3 10	3,770 8 7	25,876 12 0	28,693 5 4	4,522 1 2	22,074 7 8	18,839 4 4	44,241 4 0	18,105 9 9	2,41,836 7 4
B. ESTABLISHMENTS.														
I.—Salaries—														
a. Conservators	18,000 0 0	....	....	....	....	....	....	....	....	....	....	....	....	18,000 0 0
b. Superior Officers	....	10,691 13 6	5,439 5 9	8,879 6 9	12,046 12 5	7,332 4 2	12,324 1 0	9,900 0 0	5,192 2 5	10,780 0 0	9,400 6 11	10,599 6 11	....	1,01,985 11 10
c. Subordinate Forest and Depôt Establishments	....	24,102 11 7	22,596 15 9	22,707 3 8	33,620 1 0	12,313 11 3	35,427 14 3	28,563 15 1	12,231 11 6	8,075 1 7	25,739 15 11	27,716 10 11	....	2,53,131 0 6
d. Office Establishments	6,697 1 5	2,064 14 11	2,196 0 0	2,501 5 2	2,560 1 1	1,846 8 5	2,536 7 6	2,529 6 0	1,796 9 8	2,180 8 3	3,001 5 7	3,174 11 0	....	33,084 15 0
e. Deputation and Special allowances	314 13 9	....	....	....	....	....	....	....	....	....	....	....	....	314 13 9
II.—Travelling Allowances—														
a. Conservators	2,400 0 0	....	....	....	....	....	....	....	....	....	....	....	....	2,400 0 0
b. Superior Officers	....	1,793 1 2	1,360 9 9	2,407 9 0	2,556 2 7	1,827 13 9	2,520 0 0	2,520 0 0	1,580 15 4	1,787 4 4	3,229 4 3	4,106 0 3	....	25,088 12 5
c. Subordinate Forest and Depôt Establishments	....	1,509 12 3	1,847 10 8	1,367 15 2	1,953 3 5	743 7 0	1,643 10 11	1,722 14 0	835 1 3	857 12 3	1,037 3 3	1,005 11 1	....	14,524 5 3
d. Office Establishments	1,804 0 4	780 7 10	842 6 7	901 13 7	936 5 6	667 15 6	902 5 2	963 12 1	671 13 4	776 7 11	986 4 0	1,051 14 8	....	11,285 10 6
III.—Contingencies—														
a. Stationery	11 8 0	365 10 11	357 8 11	461 5 5	515 5 2	187 12 3	387 5 10	456 4 3	178 9 7	175 6 7	390 6 9	394 7 8	....	3,881 11 4
b. Carriage of Tents and Records	361 15 0	238 14 3	233 0 0	224 12 6	484 4 1	152 6 0	305 8 6	246 13 5	116 11 0	86 12 2	265 14 6	258 14 4	....	2,975 13 9
c. Rents, Rates and Taxes	480 0 0	255 8 0	267 3 10	276 0 0	102 0 0	24 0 0	284 12 0	8 5 7	59 8 0	100 0 0	384 6 0	198 10 10	....	2,440 6 3
d. Pay of Police Guards	....	....	....	....	....	....	....	....	....	....	....	....	....	....
e. Official Postage	458 11 0	540 12 0	787 6 6	722 2 0	896 3 6	315 12 0	795 15 6	755 2 0	282 7 0	184 6 0	656 12 6	731 8 6	....	7,127 2 6
f. Sundries	366 3 4	829 7 11	868 14 1	423 1 3	479 15 3	163 0 9	36 0 10	743 11 6	136 6 0	593 9 10	565 13 4	1,266 2 9	....	6,472 6 10
Payments to Officers of other Provinces	2,262 14 6	....	....	....	....	....	....	....	....	....	....	....	....	2,262 14 6
Total, B. Establishments	33,157 3 4	42,573 2 4	36,797 1 10	40,872 10 6	56,150 6 0	25,604 11 1	57,164 1 6	48,415 3 11	23,081 15 1	25,597 4 11	45,657 13 0	50,504 2 11	....	4,85,575 13 5
GRAND TOTAL OF EXPENDITURE	34,157 11 7	54,381 3 4	53,090 2 1	57,954 15 8	85,679 9 10	29,375 3 8	83,040 13 6	77,108 9 3	27,604 0 3	47,671 12 7	64,497 1 4	94,745 6 11	18,105 9 9	7,27,412 3 9

Bombay, 13th August 1889.

A. F. COX,
Acting Accountant General.

B 623—20 N C

FORM No. 59.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Account Current for the year 1888-89.

	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.
To Cash Balance	.. ..	769 2 9	By 1. Refunds and Drawbacks	.....	4,577 9 0
,, VIII.—Assessed Taxes Income Tax—			,, 11. Forests	.....	7,27,412 3 9
Deductions by Government from Salaries and Pensions.	.....	4,177 15 8	,, Revenue Deposits	.....	27,688 13 9
,, XXIII.—Stationery and Printing—			,, Cheques and Bills (Departmental Cheques)—		
Other Press Receipts—			Forest Cheques (cancelled)	.....	2,662 11 11
Government Central Press...	.....	23 6 9	,, Advances Recoverable—		
,, XXXII.—Civil Works in charge Civil Officers—			Forest Advances	4,40,834 5 3	
Road-side Trees Receipts	.....	217 12 0	Objection Book Advances	2,508 10 8	
Revenue Deposits	.....	42,326 15 3	Tentage Advances	0 0 5	
Cheques and Bills—					4,43,343 0 4
(Departmental Cheques)—			,, Forest Remittances—		
Forest Cheques drawn	.....	7,39,111 14 8	Remittances to Treasuries	12,04,390 11 8	
,, Advances Recoverable—			Inter-Divisional Transfers	43,316 10 8	
Forest Advances	4,38,887 0 4		Inter-Departmental Transfers	2,670 7 4	
Objection Book Advances	2,069 0 0				12,50,377 13 8
Tentage Advances	...		,, Cash Recoveries	.....	15,027 13 10
		4,40,956 0 4	,, Accounts Current—		
Cash Recoveries	.....	15,027 13 10	Account between Bombay and Public Works Department, Bombay (Ordinary)—		
,, Forest Remittances—			IV.—Items adjustable by Public Works Department —		
Remittances to Treasuries...	1,716 0 11		Inter-Departmental Charges...	.....	793 0 8
Inter-Divisional Transfers...	33,582 6 9		,, Account between Bombay and Military—Bombay—		
Inter-Departmental Transfers	14,728 15 10		IV.—Items adjustable by Military—		
		50,027 7 6	Miscellaneous	.....	17 0 0
,, IX.—Forest	.....	11,60,768 8 5	,, Account between India and Bombay—		
,, XXI.—Interest—			IV.—Items adjustable by India—		
Interest on Arrears of Revenue	.....	8 2 3	Topographical Survey	.....	2,372 6 6
,, Bombay Uncovenanted Service Family Pension Fund—			,, Account between Bombay and Public Works Department (Ordinary)—		
Widows' Branch	.....	769 14 4	IV.—Items adjustable by Public Works Department—		
,, Accounts Current—			Payments for land compensation	.....	8 8 0
Account between Bombay and Public Works Department—					
Payments into Treasury by Civil Officers on account of Public Works Department	.....	510 13 1			
,, Account between India and Bombay—					
III.—Items adjustable by India—					
Topographical Survey	.....	21,708 11 6			
,, Account between India and Bombay—					
III.—Items adjustable by India—					
Bengal Military Fund	.....	316 5 2			
Do. do Orphan Fund	.....	20 0 0	By Closing Balance ...	.....	2,459 14 1
GRAND TOTAL Rs. ..	.....	24,76,740 15 6	GRAND TOTAL Rs....	.....	24,76,740 15 6

No. $\frac{F}{14794}$

Forwarded to the Conservator of Forests, Northern Circle, under Section 238 of the Forest Code.

FORM No. 60.

FORM NO. 60.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Revenue received and Outstandings on account of Revenue during 1888-89.

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
North Thána ...	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	.....	14,771 6 2	14,771 6 2	14,771 6 2	.....	
	b. Firewood and charcoal	.....	9,183 7 0	9,183 7 0	9,183 7 0	.....	
	c. Bámbus	.....	1 4 0	1 4 0	1 4 0	.....	
	d. Sandalwood...	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	1,789 1 6	1,789 1 6	1,789 1 6	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	.....	1,54,992 13 9	1,54,992 13 9	1,53,391 13 9	1,601 0 0	
	b. Firewood and charcoal	.....	8,635 13 7	8,635 13 7	8,635 13 7	.....	
	c. Bámbus	.....	11,892 12 5	11,892 12 5	11,892 12 5	.....	
	d. Grazing and fodder grass ...	.....	13,316 3 0	13,316 3 0	13,316 3 0	.....	
	e. Other minor produce	.....	4,698 7 6	4,698 7 6	4,665 15 6	32 8 0	
	III.—Confiscated, drift, and waif wood ...	.....	1,643 10 7	1,643 10 7	1,643 10 7	.....	
	Total ...	.....	2,20,924 15 6	2,20,924 15 6	2,19,291 7 6	1,633 8 0	
South Thána ...	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	.....	7,665 1 0	7,665 1 0	7,665 1 0	.....	
	b. Firewood and charcoal	.....	2,546 7 6	2,546 7 6	2,546 7 6	.....	
	c. Bámbus	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	5,088 15 1	5,088 15 1	4,319 11 1	769 4 0	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	77,066 9 0	1,25,158 12 8	2,02,225 5 8	1,67,316 2 8	34,909 3 0	
	b. Firewood and charcoal	.....	1,198 6 11	1,198 6 11	1,198 6 11	.....	
	c. Bámbus	.....	3,543 6 9	3,543 6 9	3,543 6 9	.....	

	d. Grazing and fodder grass ...	0 12 0	7,298 6 8	7,299 2 8	7,299 2 8	.....
	e. Other minor produce ...	.....	2,375 9 6	2,375 9 6	2,375 9 6	.....
	III.—Confiscated, drift, and waif wood ...	.....	1,646 12 2	1,646 12 2	1,646 12 2	.....
	Total ...	77,067 5 0	1,56,521 14 3	2,33,589 3 3	1,97,910 12 3	35,678 7 0
East Khándesh	*I.—Timber and other produce removed from the Forests by Government agency—*					
	a. Timber	.....	7,721 15 10	7,721 15 10	7,721 15 10	.....
	b. Firewood and charcoal	.....	10,101 2 0	10,101 2 0	10,101 2 0	.....
	c. Bamboos	.....	.....	.....	.....	.....
	d. Sandalwood...	.....	.....	.....	.....	.....
	e. Grass and other minor produce ...	.....	.....	.....	.....	.....
	II.—Timber and other produce removed from the Forests by consumers and purchasers—					
	a. Timber	.....	3,771 7 3	3,771 7 3	3,771 7 3	.....
	b. Firewood and charcoal	.....	7,220 13 6	7,220 13 6	7,220 13 6	.....
	c. Bamboos	.....	3,718 9 6	3,718 9 6	3,718 9 6	.....
	d. Grazing and fodder grass ...	51 1 0	46,334 10 6	46,385 11 6	46,371 14 6	13 13 0
	e. Other minor produce	.....	542 7 0	542 7 0	542 7 0	.....
	III.—Confiscated, drift, and waif wood ...	.....	150 2 9	150 2 9	150 2 9	.....
	Total ...	51 1 0	79,561 4 4	79,612 5 4	79,598 8 4	13 13 0
West Khándesh	*I.—Timber and other produce removed from the Forests by Government agency—*					
	a. Timber	.....	20,239 7 9	20,239 7 9	20,239 7 9	.....
	b. Firewood and charcoal	.....	2,599 9 0	2,599 9 0	2,599 9 0	.....
	c. Bamboos	.....	.....	.....	.....	.....
	d. Sandalwood	.....	.....	.....	.....	.....
	e. Grass and other minor produce ...	.....	7 0 0	7 0 0	7 0 0	.....
	II.—Timber and other produce removed from the Forests by consumers and purchasers—					
	a. Timber	.....	14,395 4 9	14,395 4 9	14,395 4 9	.....
	b. Firewood and charcoal	.....	3,880 3 0	3,880 3 0	3,880 3 0	.....
	c. Bamboos	.....	2,562 7 4	2,562 7 4	2,562 7 4	.....
	d. Grazing and fodder grass ...	64 4 0	54,841 10 10	54,905 14 10	54,870 1 10	35 13 0
	e. Other minor produce	.....	9,300 2 0	9,300 2 0	9,300 2 0	.....
	III.—Confiscated, drift, and waif wood ...	.....	666 11 4	666 11 4	666 11 4	.....
	Total ...	64 4 0	1,08,492 8 0	1,08,556 12 0	1,08,520 15 0	35 13 0

FORM No. 60—*continued.*

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Násik	*I.—Timber and other produce removed from the Forests by Government Agency—*						
	a. Timber	4,142 9 1	27,513 15 11	31,656 9 0	29,356 2 6	2,300 6 6	
	b. Firewood and charcoal	4 8 0	2,913 3 0	2,917 11 0	2,917 11 0	.....	
	c. Bamboos	.....	.....	.....	.....	.....	
	d. Sandalwood...	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	0 1 0	0 1 0	0 1 0	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	.....	9,192 14 6	9,192 14 6	9,192 14 6	.....	
	b. Firewood and charcoal	17 8 0	1,485 15 7	1,503 7 7	1,490 1 7	13 6 0	
	c. Bamboos	.....	4,004 3 9	4,004 3 9	4,004 3 9	.....	
	d. Grazing and fodder grass ...	1,004 0 10	42,741 3 11	43,745 4 9	43,292 12 9	452 8 0	
	e. Other minor produce	.....	1,726 7 2	1,726 7 2	1,726 7 2	.....	
	III.—Confiscated, drift, and waif wood ...	3 4 3	110 2 2	113 6 5	110 2 2	3 4 3	
	Total ...	5,171 14 2	89,688 3 0	94,860 1 2	92,090 8 5	2,769 8 9	
Ahmednagar ...	*I.—Timber and other produce removed from the Forests by Government Agency—*						
	a. Timber	.....	7,364 13 8	7,364 13 8	7,336 0 11	28 12 9	
	b. Firewood and charcoal	.....	1,294 3 9	1,294 3 9	1,294 3 9	.....	
	c. Bamboos	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	2,056 8 10	2,056 8 10	2,056 8 10	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	.....	217 0 2	217 0 2	217 0 2	.....	
	b. Firewood and charcoal	.....	641 4 2	641 4 2	641 4 2	.....	
	c. Bamboos	.....	342 5 1	342 5 1	342 5 1	.....	
	d. Grazing and fodder grass ...	.....	40,864 6 4	40,864 6 4	40,864 6 4	.....	
	e. Other minor produce	.....	1,416 13 1	1,416 13 1	1,416 13 1	.....	
	III.—Confiscated, drift, and waif wood ...	.....	93 14 11	93 14 11	93 14 11	.....	
	Total ...	.....	54,291 6 0	54,291 6 0	54,262 9 3	28 12 9	

Poona	*I.—Timber and other produce removed from the Forests by Government Agency—*													
	a. Timber	.....	27,698	10	0	27,698	10	0	27,698	10	0	.....		
	b. Firewood and charcoal	.....	10,939	12	0	10,939	12	0	10,939	12	0	.....		
	c. Bamboos	.....	.....			.....			.....			.....		
	d. Sandalwood...	.....	.....			.....			.....			.....		
	e. Grass and other minor produce ...	.....	3,538	7	10	3,538	7	10	3,538	7	10	.....		
	II.—Timber and other produce removed from the Forests by consumers and purchasers—													
	a. Timber	.....	129	10	9	129	10	9	129	10	9	.....		
	b. Firewood and charcoal	.....	1,673	1	6	1,673	1	6	1,673	1	6	.....		
	c. Bamboos	.....	1,752	14	6	1,752	14	6	1,752	14	6	.....		
	d. Grazing and fodder grass ...	.....	52,354	9	0	52,354	9	0	52,354	9	0	.....		
	e. Other minor produce	.....	2,913	3	6	2,913	3	6	2,913	3	6	.....		
	III.—Confiscated, drift, and waif wood ...	.....	169	3	2	169	3	2	169	3	2	.....		
	Total ...	.....	1,01,169	8	3	1,01,169	8	3	1,01,169	8	3	.....		
Sátára	*I.—Timber and other produce removed from the Forests by Government Agency—*													
	a. Timber	.....	16,491	3	8	16,491	3	8	16,491	3	8	.....		
	b. Firewood and charcoal	.....	4,000	11	9	4,000	11	9	4,000	11	9	.....		
	c. Bamboos	.....	6	1	4	6	1	4	6	1	4	.....		
	d. Sandalwood...	.....	.....			.....			.....			.....		
	e. Grass and other minor produce ...	.....	15,315	8	0	15,315	8	0	15,315	8	0	.....		
	II.—Timber and other produce removed from the Forests by consumers and purchasers—													
	a. Timber	.....	4,051	15	0	4,051	15	0	4,051	15	0	.....		
	b. Firewood and charcoal	.....	413	11	9	413	11	9	413	11	9	.....		
	c. Bamboos	.....	282	2	1	282	2	1	282	2	1	.....		
	d. Grazing and fodder grass ...	.....	40,499	12	6	40,499	12	6	40,499	12	6	.....		
	e. Other minor produce	.....	4,126	12	0	4,126	12	0	4,043	12	0	83	0	0
	III.—Confiscated, drift, and waif wood ...	.....	117	4	9	117	4	9	117	4	9	.....		
	Total ...	.....	85,305	2	10	85,305	2	10	85,222	2	10	83	0	0

FORM No. 60—*continued.*

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Sholápur ...	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	.....	173 4 0	173 4 0	173 4 0	.....	
	b. Firewood and charcoal	.....	1,134 0 6	1,134 0 6	1,134 0 6	.....	
	c. Bamboos	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	16 2 6	16 2 6	16 2 6	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	.....	290 2 3	290 2 3	290 2 3	.....	
	b. Firewood and charcoal	.....	51 10 9	51 10 9	51 10 9	.....	
	c. Bamboos	.....	.....	.....	.....	.....	
	d. Grazing and fodder grass ...	.....	21,828 10 4	21,828 10 4	21,768 10 4	60 0 0	
	e. Other minor produce	.....	529 10 0	529 10 0	529 10 0	.....	
	III.—Confiscated, drift, and waif wood ...	.....	20 6 6	20 6 6	20 6 6	.....	
	Total ...	.....	24,043 14 10	24,043 14 10	23,983 14 10	60 0 0	
Surat	*I.—Timber and other produce removed from the Forests by Government agency—*						
	a. Timber	.....	43,844 1 1	43,844 1 1	41,889 5 4	1,954 11 9	
	b. Firewood and charcoal	.....	302 8 10	302 8 10	302 8 10	.....	
	c. Bamboos	.....	.....	.....	.....	.....	
	d. Sandalwood	.....	.....	.....	.....	.....	
	e. Grass and other minor produce ...	.....	.....	.....	.....	.....	
	II.—Timber and other produce removed from the Forests by consumers and purchasers—						
	a. Timber	1,845 0 0	33,899 7 9	35,744 7 9	35,744 7 9	.....	
	b. Firewood and charcoal	.....	1,523 13 2	1,523 13 2	1,523 13 2	.....	
	c. Bamboos	.....	12,237 0 5	12,237 0 5	12,237 0 5	.....	
	d. Grazing and fodder grass ...	.....	794 11 0	794 11 0	794 11 0	.....	
	e. Other minor produce	.....	6,349 5 7	6,349 5 7	6,349 5 7	.....	
	III.—Confiscated, drift, and waif wood ...	609 13 3	247 0 2	856 13 5	247 0 2	609 13 3	
	Total ...	2,454 13 3	99,198 0 0	1,01,652 13 3	99,088 4 8	2,564 9 0	

Panch Mahals...	*I.—Timber and other produce removed from the Forests by Government agency—*														
	a. Timber	.....		1,038	14	0	1,038	14	0	1,038	14	0	.....		
	b. Firewood and charcoal	.....		739	2	0	739	2	0	739	2	0	.....		
	c. Bámbus	.....		.....			.....			.....			.....		
	d. Sandalwood...	.....		.....			.....			.....			.....		
	e. Grass and other minor produce ...	.....		37	8	0	37	8	0	37	8	0	.....		
	II.—Timber and other produce removed from the Forests by consumers and purchasers—														
	a. Timber	.....		33,927	2	2	33,927	2	2	33,927	2	2	.....		
	b. Firewood and charcoal	.....		932	1	0	932	1	0	932	1	0	.....		
	c. Bámbus	.....		2,026	5	9	2,026	5	9	2,026	5	9	.....		
	d. Grazing and fodder grass ...	.....		5,732	9	6	5,732	9	6	5,732	9	6	.....		
	e. Other minor produce	15	9	6	2,191	9	8	2,207	3	2	2,196	10	2	10	9	0
	III.—Confiscated, drift, and waif wood ...	.....		46	8	9	46	8	9	46	8	9	.....		
	Total ...	15	9	6	46,671	12	10	46,687	6	4	46,676	13	4	10	9	0
Total, Northern Circle ...	*I.—Timber and other produce removed from the Forests by Government agency—*														
	a. Timber	4,142	9	1	1,74,522	13	1	1,78,665	6	2	1,74,381	7	2	4,283	15	0
	b. Firewood and charcoal	4	8	0	45,754	3	4	45,758	11	4	45,758	11	4	.....		
	c. Bámbus	.....			7	5	4	7	5	4	7	5	4	.....		
	d. Sandalwood...	.....			.....			.....			.....			.....		
	e. Grass and other minor produce ...	.....			27,849	4	9	27,849	4	9	27,080	0	9	769	4	0
	II.—Timber and other produce removed from the Forests by consumers and purchasers—														
	a. Timber	78,911	9	0	3,80,026	11	0	4,58,938	4	0	4,22,428	1	0	36,510	3	0
	b. Firewood and charcoal	17	8	0	27,656	14	11	27,674	6	11	27,661	0	11	13	6	0
	c. Bámbus	.....			42,362	3	7	42,362	3	7	42,362	3	7	.....		
	d. Grazing and fodder grass ...	1,120	1	10	3,26,606	13	7	3,27,726	15	5	3,27,164	13	5	562	2	0
	e. Other minor produce	15	9	6	36,170	7	0	36,186	0	6	36,059	15	6	126	1	0
	III.—Confiscated, drift, and waif wood ...	613	1	6	4,911	13	3	5,524	14	9	4,911	13	3	613	1	6
	Grand Total ...	84,824	14	11	10,65,868	9	10	1,150,693	8	9	11,07,815	8	3	42,878	0	6

Dated Poona, 31st October 1889.

A. T. SHUTTLEWORTH,
Conservator of Forests, Northern Circle.

FORM No. 61.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Outstandings and Liabilities on account of Contractors and Disbursers for 1888-89.

Divisions.	Department Debtor.		Department Creditor.		Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during the year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Contractors.									
Násik	...	12 0 0	12 0 0	.....	12 0 0	12 0 0	.....	...	
Total Contractors ...	...	12 0 0	12 0 0	.....	12 0 0	12 0 0	.....	...	
Disbursers.									
Ahmednagar	...	36,772 4 10	36,772 4 10	.....	36,772 4 10	36,772 4 10	.....	...	
Khándesh, East	...	41,726 5 9	41,726 5 9	.....	41,726 5 9	41,726 5 9	.....	...	
Do. West ...	...	40,656 10 1	40,656 10 1	.....	40,659 3 8	40,659 3 8	14 1 7	11 8 0	
Násik	...	46,023 9 4	46,023 9 4	.....	46,520 9 9	46,520 9 9	497 0 5	...	
Panch Maháls	...	18,619 3 10	18,619 3 10	.....	18,619 3 10	18,619 3 10	.....	...	
Poona	...	52,475 1 9	52,475 1 9	.....	52,475 1 9	52,475 1 9	.....	...	
Sátára	...	43,914 12 1	43,914 12 1	4 9 4	43,960 5 9	43,964 15 1	50 3 0	...	
Sholápur	...	17,722 4 10	17,722 4 10	.....	17,724 8 11	17,724 8 11	2 4 1	...	
Surat	...	20,444 8 0	20,444 8 0	.....	20,944 8 0	20,944 8 0	500 0 0	...	
North Thána	...	52,139 12 0	52,139 12 0	.....	52,143 12 0	52,143 12 0	4 0 0	...	
South Thána	0 0 6	62,465 5 6	62,465 6 0	1 4 0	62,919 2 8	62,920 6 8	455 4 8	0 4 0	
Working Plans	...	2,764 2 6	2,764 2 6	.....	2,764 2 6	2,764 2 6	.....	...	
Bombay Forest Surveys ...	...	3,150 15 10	3,150 15 10	.....	3,592 15 10	3,592 15 10	442 0 0	...	
Total Disbursers ...	0 0 6	4,38,875 0 4	4,38,875 0 10	5 13 4	4,40,822 5 3	4,40,828 2 7	1,964 13 9	11 12 0	
Grand Total ...	0 0 6	4,38,887 0 4	4,38,887 0 10	5 13 4	4,40,834 5 3	4,40,840 2 7	1,964 13 9	11 12 0	

No. $\frac{F}{14796}$.

Forwarded to the Conservator of Forests, Northern Circle, under Section 238 of the Forest Code.

Bombay, Accountant General's Office,
12th August 1889.

A. F. COX,
Acting Accountant General.

FORM No. 62.

FOREST DEPARTMENT, BOMBAY, NORTHERN CIRCLE.

Financial Results of the year 1888-89.

Division.	TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY.		OTHER REVENUE.		FORMATION, PROTECTION, AND IMPROVEMENT OF FORESTS.	TOTAL.		REMARKS
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
North Thána ...	25,745	8,763	2,00,186	7,466	64,158	2,25,931	80,387	
South Thána ...	14,531	6,400	1,89,976	4,670	96,826	2,04,507	1,07,896	
East Khándesh ...	17,823	4,554	75,806	5,847	45,422	93,629	55,823	
West Khándesh ...	22,846	6,347	1,05,326	6,712	48,994	1,28,172	62,053	
Násik	32,274	3,707	61,106	2,585	82,120	93,380	88,412	
Ahmednagar ...	10,687	4,455	44,459	1,472	49,820	55,146	55,747	
Poona	42,177	8,313	59,732	3,635	73,825	1,01,909	85,773	
Sátára	35,813	12,843	49,543	5,361	61,637	85,356	79,841	
Sholápur	1,323	618	23,324	455	27,897	24,647	28,970	
Surat	42,192	11,026	57,616	10,373	29,004	99,808	50,403	
Panch Maháls ...	1,816	2,009	46,463	1,440	28,658	48,284	32,107	
Total ...	2,47,227	69,035	9,13,542	50,016	6,08,361	11,60,769	7,27,412	

A. T. SHUTTLEWORTH,
Conservator of Forests, Nothern Circle.

Dated Poona, 31st October 1889.

No. 17 of 1890.

Revenue Department.

Ahmedabad Districts,
Camp Páldi, 5th January 1890.

Submitted to Government.

2. The Conservator has, in paragraphs 1 to 19, concisely summarized the chief features of the report, and the Commissioner, N. D., will now record a few remarks on such portions of Mr. Shuttleworth's able and interesting report as relate to the four forest charges pertaining to the Northern Division, *viz.*, North Thána, South Thána, Surat and the Panch Mahál, as also upon any points of *general* interest noted by the Conservator.

Chapter I.

3. Paragraph 26.—Proposals for the settlement of rights in certain lands in the Modása Petha were submitted to Government under this office No. 3626, dated 18th November 1889. The question of the transfer of these forests to the control of the Forest Department has been deferred until the orders in paragraph 3 of Government Resolution No. 4832 of 6th July 1889 have been carried out, as it will then be probably found possible for the officer in charge of the Gujarát forests to take charge of the Modása Petha.

4. Paragraphs 30, 40 to 43.—The actual progress made in the demarcation of forests by Mr. Owen in the Thána District is not stated, but Mr. Shuttleworth seems satisfied with the amount of work done. It is satisfactory to note that the demarcation of the Panch Mahál forests has been completed. The Conservator appears to consider that the classification of a large proportion of the forest area in Godhra as "Protected" tends to create a feeling of uncertainty, and he also deplores that the forests in the remaining tálukás of the district should have been allowed to continue as protected, but apparently the decision was arrived at after due consideration. Mr. Propert cannot, as yet, form any conclusive opinion on the subject, but hopes to be able to do so after visiting the Panch Mahál.

5. Paragraphs 47 and 48.—Good progress has been made in the erection of boundary-marks in Thána and the Panch Mahál. The completion of these "visible signs" of forest conservation is a matter of great importance; it is clear, however, that a considerable period must elapse before completion is effected.

6. Paragraphs 49 and 57.—It is not clear what progress has been made in settlement enquiries, but the work has been commenced in Máhím and Dáhánu, and it has been completed during the year in Váda. As regards the settlement of old forest areas gazetted under Section 34 of the Forest Act in March 1879, the progress in the Panch Mahál is satisfactory, but nothing appears to have been done in Thána or Surat. The attention of the Collector of Surat has been drawn to the concluding portion of paragraph 8 of the Government Resolution reviewing the last Forest Administration Reports, and he has been requested to state whether any arrangements have been made to proceed with the work during the current season.

7. Paragraphs 61 and 62.—The "destructive privileges" to which the Conservator alludes as having been conceded in the Dohad and Jhálod Tálukás of the Panch Mahál were found by the Forest Settlement Officer to be necessary, and they were granted by Government after full consideration. Mr. Shuttleworth's remarks in paragraph 62 should not therefore have found a place in this report. Such privileges have been found necessary elsewhere, and must be continued, unless it be desired to make forest conservancy a curse to the people.

Chapter II.

8. The Commissioner, N. D., has no desire to raise unnecessary objections to the forest survey scheme, and, as it has been sanctioned by Government, Mr. Propert refrains from minuting upon it in a detailed manner. He cannot however help feeling that the work will be very lengthy, and awfully costly, while the labour bestowed upon many of our Bombay forests will scarcely prove remunerative. The Commissioner, N. D., moreover, cannot understand, except in the case of a few specially valuable tracts, the necessity for surveys on such an enormous scale, and he believes that the contents of most of the ordinary forest areas could be easily treated and disposed of by personal examination, assisted by the ordinary topographical maps. Surely the coupes in the Thána Collectorate and elsewhere might be shown with sufficient accuracy by means of rough hand-made maps prepared by ordinary native surveyors on small salaries attached to the various District Forest Offices.

9. The preparation of working plans appears a very heavy piece of work and likely to extend over a very considerable period, considering the strength of the establishment employed upon it.

Chapter III.

10. Paragraphs 85 and 86.—It is quite certain that the subordinate staff of the Forest Department, at any rate in some districts, needs strengthening, but as the requirements of each district have been duly considered by the Committee appointed to report on the subject in Government Resolution No. 4832, dated 6th July last, it is needless to record any remarks on the subject now. The report of the Committee will, the Commissioner, N. D., hopes, be in the hands of Government before the end of the current month.

11. Paragraph 89.—Except in the Surat Division, there was an increase in the number of prosecutions instituted during the year, which the Conservator ascribes to increased vigilance on the part of the protective staff. The results were not satisfactory in North Thána, where nearly 50 per cent. of the prosecutions were unsuccessful. In South Thána, Panch Mahál and particularly in Surat, the result was better.

12. Paragraphs 104 to 114.—A much smaller area was traversed by fire in the Thána and Panch Mahál Districts, but in Surat, there appears a sudden increase from 27,029 acres in 1887-88 to 298,531 in 1888-89, which the Conservator states (paragraph 110) is due to the portion of the Dáng Forests fired during 1887-88 not having been reported correctly in last year's returns. Mr. Shuttleworth acknowledges the assistance of the villagers in helping to put out fires, and their interest might be stimulated a good deal by a judicious system of rewards. It is curious to note how strongly Forest officers of the present day object to "Forest fires". The Commissioner, N. D., thinks that certain authors writing within the past 25 or 30 years have stated that the occasional burning of the undergrowth in forests exercises a beneficial influence on the trees therein.

13. Paragraphs 115 and 117.—The grazing receipts realized during the year show an increase of Rs. 78,310 as compared with the past year, and are almost eight times as much as the receipts of 1878-79. The increase principally occurs in certain Deccan districts owing to forest areas being thrown open in consequence of scarcity of fodder. In this division North Thána contributed Rs. 2,346 to the increase, South Thána Rs. 3,846 and the Panch Mahál Rs. 412, while in Surat there was a decrease of Rs. 130.

14. Paragraphs 123, 124, 125, 126.—It is natural that the Conservator should inveigh against the grant of thorns for the hedging of fields, but the matter is a difficult one, and Government cannot afford to ignore all measures for the protection of the rayats' crops from the ravages of cattle.

15. Paragraphs 127, 130, 131.—It is to be regretted that despite all precautions, the seedlings in a portion of the South Thána Division were destroyed by fire. At the same time it would seem that too small an amount out of forest revenue is devoted to artificial reproduction in the Presidency. There is, no doubt,

much force in the remarks of the Conservator at the close of paragraph 131 on the subject of natural reproduction in the Konkan and Gujarát. A somewhat larger expenditure, however, on artificial reproduction elsewhere seems to Mr. Propert desirable.

Chapter IV.

16. Paragraphs 149 to 155, 170, 171.—The receipts from departmental fellings were appreciably less than in the previous year in all the forest charges in this division except Surat, the decrease in North Thána being Rs. 10,481-3-3, in South Thána Rs. 18,283-12-0, and in the Panch Mahals Rs. 2,823-6-0; while, on the other hand, in Surat there was an increase of Rs. 23,205-11-2, a portion of which, however, includes the sale-proceeds of a large number of rafters of the previous year. The falling off has been satisfactorily explained by the Conservator, and in the circumstances stated in paragraph 151 the Commissioner, N. D., concurs with Mr. Shuttleworth that the intervention of the Forest Department in the matter of the retail wood trade is no longer necessary.

17. Paragraphs 186 to 192.—The receipts from timber and other produce removed from the forests by consumers or purchasers show considerable development, especially in the North and South Thána ranges. The Conservator expresses a hope (paragraph 188) that the permit system for supplying the wants of the local population may be abandoned, as people can obtain their supplies from the contractors' fellings; the realizations, however, from permit fees do not show any appreciable diminution, and the Commissioner, N. D., would not be in a hurry to put an end to the system.

18. Paragraph 199.—The free grants of timber made in this division were very small indeed, but compare favourably with the previous years (1886-87 and 1887-88). It would seem, however, that the grants referred to in paragraph 172 have not been included in the table in this paragraph.

Chapter V.

19. Paragraphs 202, 203, 204, 205.—The gross revenue is the highest yet reached, and exceeds that of the past year by Rs. 1,92,144, which is very satisfactory. The districts of Thana and Surat contribute Rs. 1,14,098-12-11 to this increase, while in the Panch Mahals, for the reasons explained in paragraph 205, there has been an actual decrease of Rs. 8,777-2-8. The expenditure of the year, however, exceeded that of the preceding year by Rs. 4,276-11-11, and the net revenue therefore shows an increase of Rs. 1,87,866 over last year.

20. Paragraph 207.—Rs. 2,41,836-7-4 were expended under "A—Conservancy and Works" as against Rs. 2,26,095-14-1 in the previous year, which shows an increase of Rs. 15,740-9-3. The principal and only increase in this Division was in South Thána (Rs. 13,651-6-1), while in North Thána, Surat and Panch Mahals there was an aggregate decrease of Rs. 10,371-10-8.

21. Paragraph 211.—The Commissioner, N. D., sees no real advantage likely to be derived from Mr. Shuttleworth's proposal to withdraw certain kurans from the Military Department. The gain, if any, would represent a mere book entry, and Mr. Propert thinks that for the use of the army Government acts rightly in handing over its own property in the shape of grass at the lowest possible cost.

Chapter VI.

22. *General Remarks.*—Regarding these, the Commissioner, N. D., has only to state that Mr. Shuttleworth and the officers associated with him have, as usual, worked energetically to further the interest of the Forest Department.

W. H. PROPERT,
Commissioner, N. D.

No. $\frac{R.}{445}$ OF 1890.

REVENUE DEPARTMENT.

From

J. G. MOORE, ESQUIRE,
Commissioner, C. D.;

To

THE CHIEF SECRETARY TO GOVERNMENT.

Sholápur Districts,
Camp Karmála, $\frac{27}{29}$th January 1890.

SIR,

I have the honor to submit, with my remarks, the Forest Administration Report of the Northern Circle, for the year 1888-89, received from the Conservator, with his letter, No. 4188, dated the 6th ultimo.

2. Having been living in this Division continuously for the last 17 years, I am in a position to support the Conservator, when he writes of the beneficial change that has come over the mountain and hill ranges under forest protection. I know hill-sides which were comparatively bare and are now covered with fine growth. Take the hills on the south of the railway between Selarvádi and Talegaon Dhamdhera; take the Kátraj and Khamatki Ghâts; take the two sisters; take the western slopes of the Syhádri range where land has been rescued from a very low order of cultivation, and acquired for forest, and the line of forest reserve is defined as clearly as if it had been drawn down the side of the hills with a pencil, nice healthy vegetation on one side and bare land on the other side of the line. I could mention numerous other instances, but I will only quote one more, and that is the low hills between Bhusával and Jámner in the Khándesh District. I revisited this part of the country in February 1889, after a lapse of 15 years, and I was immensely struck by the wonderful growth, which covered what were comparatively bare stony hills. All this cannot be otherwise than beneficial to the country and its people, who are already beginning to appreciate the advantages, resulting from forest conservancy.

Para 2.

3. The net gain to the reserved forests, deducting areas disforested, was 235 square miles and 83 acres. The largest accession to the reserved forest was in the district of Násik, being 170 square miles and 480 acres. It appears, however, from para. 23 of the report, that of this area, 82 square miles and 536 acres merely represent a book adjustment.

Paras. 22 and 23.

4. Khándesh and Násik are the only two districts, in the Central Division, in which forest demarcation has not yet been completed. In one (1) táluka in Násik and in four (4) tálukas in Khándesh, the work remains to be completed and in two (2) tálukas of the latter district, the work has not yet been commenced.

Para. 27.

5. Of lands notified, under Section 4 of the Forest Act, but not finally notified under Section 19, the largest area (*viz.* 198 square miles and 463 acres) is shown against the Khándesh District, the area of similar lands in the other districts of this Division being comparatively small. There is a Special Forest Settlement Officer working in the Khándesh District, who will be able to get through the work in a year or two. It will be seen from para. 32 of the report that, in spite of the disadvantages, arising from an unfavourable climate, and the vast areas to be traversed, which retard the progress of demarcation and settlement work in Khándesh, Mr. Dodgson's record of work is highly creditable to that officer. Mr. Dodgson's report on the demarcation of the Akráni Toranmál reserve, was submitted to Government, with my Memorandum, No. 189, dated the 14th instant.

Paras. 29 and 32.

6. The only táluka, in Násik, of which the demarcation work still remains to be completed, is Dindori. The information, submitted by the Collector of Násik, was incomplete and unsatisfactory, and although I returned the papers, for revision, in the month of July 1889, I have heard nothing more about them up to date. In Ahmednagar, 759 acres and 33 gunthás of occupied lands were acquired for forest, at a cost of Rs. 2,606-12-10. In Poona, the total area of occupied lands, acquired by purchase and exchange, was 655 acres. In the District of Sátara, 132 acres and 1 guntha of occupied lands were purchased at a cost of Rs. 376-7-0, and in Sholápur, no acquisition was made.

Paras. 33 to 39.

7. I agree with Mr. Shuttleworth that the area, taken up for forest, in the Bhore State, under the scheme, proposed by Mr. Sitárám Dámodar, is insufficient. But it is not possible to propose any modifications until the Revenue Survey, which is now in progress in that State, has been completed.

Para. 44.

8. It is satisfactory to note that considerable progress was made, during the year, in erecting cairns to define forest boundaries. Násik District takes the lead in the number (11,412) of cairns, large and small, erected, the cost being Rs. 3,554-3-2, while the smallest number (614) erected was in Ahmednagar, at a cost of Rs. 271-2-6. The definition of forest boundaries, by clear and unmistakeable marks, is of the utmost importance, both in the interests of the "rayats" and the Forest Department, but it is a matter of money, and I have no doubt that the work will be pushed forward, as quickly, as the funds, at the disposal of the Conservator, will permit.

Paras. 47 and 48.

9. The statement, embodied in this para., shows that in the Násik and Poona Districts of the Central Division, there are 84 and 192 square miles, respectively, of areas of old forest, notified under Section 34 of the Forest Act, in which private rights have not been enquired into, settled and recorded. No progress was, however, made in the matter of settling and recording these rights. This is much to be regretted.

Para. 57.

10. I fully agree with Mr. Shuttleworth in the general remarks, which he has recorded in para. 62, from his own standpoint; but Government has, it should be remembered, to consider the welfare of the population at large, including wild tribes, as well as the necessity for forest conservancy, and it would be injudicious, with a stroke of the pen, to introduce a rigorous code of forest rules, as such a proceeding would be likely to cause serious hardship and discontent. I trust, however, that the code of privileges for the Khándesh District, in its modified form, will give, to the Forest Department, all that they can fairly expect, at present, in the restriction of privileges, and that, as time rolls on, and the necessity for forest conservancy is better understood, the privileges will be gradually withdrawn, as there is no doubt that they retard conservancy.

Paras. 60 to 62.

11. The institution of the Special Forest Survey Branch is, no doubt, a step in the right direction; the maps, which it will prepare, will greatly facilitate administration, and, for the reasons, given by Mr. Shuttleworth, I agree with him that the 8-inch scale, which is superfluous for Northern or Central India, is a necessity for this part of the country. The operations of the Survey were in progress in Násik, Poona and Sátára of the Central Division, during the year under report.

Paras. 64 to 69.

12. The necessity for strengthening forest establishments has been brought to the notice of Government and I am sure that this important matter will receive due and favourable consideration at their hands. Increased establishment means an increase of revenue, so that any additional expense will soon be covered.

Paras. 85 and 86.

13. From the figures, embodied in para. 89 of the report, it appears that, of the 1,031 prosecutions for forest offences during the year, 699 were instituted in the Central Division, as against 405 during the previous year. The increase in the number of prosecutions is attributed to "increased vigilance on the part of the protective staff" and, doubtless, this is the case. The percentage of failures in prosecutions

Paras. 89 to 92.

during the year, under report, is about the same as during the previous year, in so far as the entire Northern Circle is concerned; but, if the calculation is limited to the figures for the Central Division alone, there was a perceptible improvement in that respect during the year under report. The failures in 1888-89 were 22·8 only, in the Central Division, while in 1887-88, they amounted to 27·4. The improvement is specially noticeable in Poona and Násik.

14. The table, given in this para., shows that, in so far as this Division is concerned, prosecutions for "injury to forest by fire" was much larger in Khándesh than in any other district. No less than 11 such prosecutions were instituted in Khándesh—a figure which greatly exceeds that for any other district in the *entire Circle*. This speaks well for the vigilance and zeal of the protective establishment in Khándesh and reflects unfavourably on the establishments in North and South Thána, especially, where fires, judging from my own experience, are constantly occurring. The figures, against the Poona District, appearing under the columns "unauthorized felling or appropriation of wood and minor forest produce" and "grazing without permission or in tracts in which grazing is prohibited" also disclose the ease with which offences against the forest law are committed. When the erection of boundary-marks is extended, there will, probably, be a decrease in these offences.

Para. 93.

15. The number of cases, compounded under Section 67 of the Forest Act, during the year under report, was perceptibly larger than in the previous year. The increase is marked in every Division of the Northern Circle, except Surat. The total amount, realised in the Circle, on account of the compromises, was Rs. 11,271-14-11. The explanation of the increase, given by the Conservator, is that "the scarcity of fodder for cattle, which was felt during the year, in some of the Deccan districts, induced much trespassing of famishing cattle into plantations and closed forests."

Paras. 96 to 98.

16. The number of cattle, impounded in the Deccan districts, is, as remarked by Mr. Shuttleworth, very large; and it is especially so in Poona and Ahmednagar. It is also to be noticed that the number of sheep and goats, impounded in these two districts, was exceptionally large. The matter, no doubt, calls for serious consideration, especially with regard to goats, whose destructive propensities are well known. I agree with the Conservator in thinking that the rates of grazing fees should be increased for the reasons given by him. It is all very well to say that, instead of raising the fees, it would be better to prosecute the offending parties, but it would be impossible to do so in every case, and the whole time of the present comparatively weak establishment would be occupied in attending magistrates' courts. I think, however, that the work of erecting boundary marks should be pushed on with vigour, so that parties, who might be prosecuted, would not, then, be in a position to say that they did not know their cattle were trespassing. If the owners of cattle, which are found trespassing, were obliged to pay the grazing fees for each head of cattle found trespassing, and if the fees are raised, we should soon find a great decrease in the number of trespasses committed.

Paras. 99 and 100.

17. The statement, embodied in para. 111 of the report, shows that, in the Central Division, the forest area, burnt by fire, during the year under report, was larger in West Khándesh, Násik and Sholápur, and smaller in the other forest divisions, as compared with the previous year. The percentage 18·7 of forest burnt to the entire forest acreage (5,413,910) is in excess of that for last year, which was only 10·8. The causes, which led to this result, in a general and special way, are detailed in paras. 104, 109 and 110 of the report. At the close of para. 104, the Conservator states as follows:—"A complete report, regarding every fire, was drawn up and submitted to the Conservator by the Divisional Forest Officer; and thus the proceedings of all parties, who were responsible for fire conservancy, where fires appeared, came under close inquiry." It would have been well, if the Conservator could have classified the fires, that occurred, under different heads, indicating the causes to which they were traceable, as such

Paras. 104 to 114.

information would have been valuable, in the way of suggesting the particular remedial measures that might be suitable to the peculiar conditions of each case. I think that the sympathy and co-operation of the heads of villages and the rayats generally, ought, considerably, to minimize the mischief that is now caused by forest fires; and an increase, in the numerical strength of the Forest Guards, would tend in that direction also. But a system of rewards should, I think, be tried on a larger and more liberal scale, and this, combined with strong repressive measures, where intentional mischief or culpable negligence is proved, would, probably, lead to a considerable diminution in these extensive and much-to-be-deplored fires, which, annually, do so much mischief. The total expenditure, on account of rewards and wages, during the year under report, amounted to Rs. 1,697, a large proportion of it being expended in the North Thána Division.

Paras. 115 and 116.

18. The revenue, from grazing and fodder grass, has continued to develop steadily during the last ten years; and the receipts, for the year under report (Rs. 3,27,165), show a very marked improvement over those of the previous years. If anything is wanting to show the beneficial results of forest conservancy, the figures, in the statement under para. 115, supply this want. Of course, I am aware that many kurans have been included in forest and that the Department cannot take credit to itself for producing the grass in such lands; but the fact, that, whenever there is a scarcity of fodder, outside forest reserves, a demand is made on the Department to throw open the forests for grazing, proves that conservancy is a grass-producing agency. Our gáiráns, as any officer of experience can state, are not pasture lands, but merely exercise grounds for cattle. As a rule, they produce nothing but spear grass; but even in such lands, with shade, even if it be the shade of bushes and scrub, the spear grass will disappear and good wholesome nutritious grass will take its place; the more we extend our forest area, the more fodder will the cattle get. The ignorant classes may cry out, but, in the end, they will bless the Forest Department.

Paras. 123 to 126.

19. Mr. Shuttleworth's views, regarding the injury to forest growth, by cultivators being allowed to cut thorns, are correct; if there were a luxuriant growth of trees with thorns, there would be no objection to the practice, but when it is a matter of bushes only, and, when we want all the cover and shade, that is available, for the protection of our hill-sides, for the nursing and growth of seedlings, and for the production of good grass, it is quite a different matter, and permission to cut thorns should only be given where a responsible forest officer considers that it can be done without any evil results. The Bill, for the preservation of game and fish, which was brought forward in 1881, was vetoed by the Government of India, but I should be very glad to see the subject reopened in good earnest, and terminated by the passing of a game law.

Paras. 128 to 130.

20. Plantation operations were undertaken in all the districts of the Central Division; but, owing to the scanty rainfall, they were not particularly successful except in the Násik District. Artificial reproduction is uphill work in the Deccan, the results are, from my experience, very discouraging, but, nevertheless, we must persevere, and, if only a few seeds germinate and a few seedlings survive annually, some good will be gained; and, after all, simple broad-casting, carried out by beat-guards, is very inexpensive.

Para. 131.

21. There is a great deal of truth in the Conservator's remarks on my comments on the luxuriant growth of bábul on the slopes of the embankments of the West Deccan Railway, and the suggestion that plots should be excavated, sown and fenced, here and there, over the adjoining bare tracts; at the same time, I should like to see the experiment tried. The secret of the growth of the bábul, on the railway embankments, is that the soil is loose and there is good drainage—but these conditions would exist if, here and there, in the bare tracts, the soil was loosened to a depth of a few feet. I have seen a luxuriant growth of seedlings in heaps of gravel and moorum, stacked, on a road side, for the purposes of road repairs, but not utilised for a year or two.

22. It is satisfactory to note that the experiments with exotic trees, made in the Ahmednagar and Násik Districts, have proved a success so far as they have gone. The experiments, with the date-palm, have not, however, been very hopeful. I do not, however, attach much importance to these experiments with exotic trees in the way of Forestry. I prefer to see the growth of indigenous trees encouraged.

Paras. 134 and 135.

23. Considerable progress was made in the construction of roads in Khándesh, Násik and Poona, which will open out tracts of forests in those districts. The proposed branch railway from Manmád to Surat *vid* Dhulia, will be as useful to the Forest Department, as it will be to the general trade of the country. The construction of roads, opening up the valleys leading from the Western Ghâts and connecting them with the trunk roads, will prove of incalculable benefit, both to the Forest Department and to the inhabitants of those jungle tracts.

Paras. 136 to 146.

24. The following facts and figures are deducible from the information supplied in these paras.:—

Paras. 156 to 166.

Forest Division.	Teak felling Operations.			Firewood cutting Operations.		
	Receipts.	Cost.	Percentage of Cost to Receipts.	Receipts.	Cost.	Percentage of Cost to Receipts.
	Rs.	Rs.		Rs.	Rs.	
East Khándesh	17,810	3,643	20·4	Not	separately	given.
West do.	19,859	3,251	16·3	2,584	1,729	66·8
Násik	30,048	2,738	9·1	Not	separately	given.
Poona	27,699	2,935	10 5	10,940	2,430	22·2
Sátára	15,225	1,643	10·7	3,901	1,768	45·3

The operations in the Ahmednagar District were on a small scale and those in Sholápur were next to none.

25. The foregoing figures clearly show that the cost of felling operations, in the case of firewood, is, as compared to receipts, undoubtedly greater than in the case of teak. East Khándesh and Násik, for which the figures are not given separately, should be excluded from consideration; but the figures for the remaining divisions show that the cost, in the case of firewood cuttings, was, in West Khándesh and Sátára, four times as much as in the case of teak cuttings, and that, in the Poona District, it was twice as much. On the other hand, it is remarkable that, in the case of the Násik District, for which separate figures, on account of teak and firewood operations, are not given, and where, therefore, the proportion of "cost to receipts" might be expected to be high, as in East Khándesh, it was 9·1 only—a proportion less than in the case of any of the three divisions for which separate figures are available. This apparent incongruity is, however, explained by the fact that the receipts, on account of the Násik District, include the sale-proceeds of timber cut down last year and the cost of which must, evidently, have been included in the last year's figures (*vide* statement embodied in para. 161).

26. "Hirda" was collected in four districts of the Central Division, *viz.* Násik, Ahmednagar, Poona and Sátára. In Sholápur there is probably no "hirda" to collect; but I cannot understand why none was, apparently, collected in Khándesh, especially as it is not an article which the Bhils are allowed to take free of charge. The receipts, on account of "hirda", have increased, almost cent per cent., during the year under report and the increase is perceptible in every district except Násik where the quantity collected was not sold.

Paras. 179 to 185.

27. The value of the free grants of timber, made during the year under report, was less than in the previous year, in each of the districts of the Central Division, except Poona.

Para. 199.

Most of the grants, in the Poona District, were made to give relief to poor people whose houses had been destroyed by fire: the grants, made in the case of "Majre" Bhilarwádi in táluka Bhimthadi alone, amounted to Rs. 490 (*vide* Government Resolution, No. 6890, dated 16th October 1888).

28. The financial results of the year's forest administration are, no doubt, most satisfactory. The gross revenue of the year under report is the largest on record since 1878-79, and the net revenue shows an increase of Rs. 1,87,866-9-1, in comparison with the previous year. The tendency of the revenue to expand is observable in every Forest Division of the Northern Circle. The causes of increase and decrease in revenue, as well as expenditure, have been explained, in detail, by the Conservator. I do not think that the Military Department will consent to receive their supplies of grass from the open market instead of, as at present, from the excellent forest "kurans", reserved for the Commissariat, but I should be very glad, if it could be arranged.

Paras. 202 to 211.

29. In handing on this report to Government, I have much pleasure to record my sense of the excellent manner in which Mr. Shuttleworth has administered the Circle under his charge. His unremitting zeal, his thorough knowledge of all the details of his department, his wonderful activity and his all-absorbing devotion to duty, are too well known to need any testimony from me.

I have the honor to be,

Sir,

Your most obedient Servant,

J. G. MOORE,

Commissioner, C. D.

SOUTHERN CIRCLE.

No. 3402 A of 1889-90.

From

J. L. L. MacGREGOR, Esquire,
Conservator of Forests, Southern Circle;

To

The CHIEF SECRETARY to GOVERNMENT,
Revenue Department,
Bombay.

Belgaum, 16th November 1889.

Sir,

I have the honour to submit herewith the Forest Administration Report of the Southern Circle for the year 1888-89, with its subsidiary statements.

I have the honour to be,
Sir,
Your most obedient Servant,
J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

Through the Commissioner, S. D.

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SOUTHERN CIRCLE.

1888-89.

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CHAPTER I.

AREA AND BOUNDARIES.

During the year 1888-89, 2 square miles 319 acres were added to the reserved forests, and 48 acres and 126 acres were excluded from the 'reserved' and 'protected' forests, respectively.

2. The following table shows the details for each Collectorate of the Circle :—

Number.	Collectorate.	Area on 1st April 1887.				Added during the Year.			
		Reserved.		Protected.		Reserved.		Protected.	
		Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.
1	Kánara	683	446	2,864	631	...	...	...	...
2	Belgaum	492	100½	197	43¾	2	319½	...	...
3	Dhárwár	171	410⅝	260	259	...	...	...	...
4	Kolába	293	631¼	88	620¾	...	...	...	...
5	Bijápur	155	75¾	...	364	...	...	...	...
6	Ratnágiri	20	8⅝	...	...	...	...	...	...
	Total ...	1,816	392¼	3,411	638¾	2	319½	...	...

Number.	Collectorate.	Excluded or transferred to other heads.				Area on 31st March 1889.				Total Forest Area.		Remarks.
		Reserved.		Protected.		Reserved.		Protected.				
		Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.	Square Miles.	Acres.			
1	Kánara	...	...	...	...	683	446	2,864	631	3,548	437	
2	Belgaum	...	...	...	111⅜	494	419⅞	196	571⅜	691	351¼	
3	Dhárwár	...	...	...	...	171	410⅝	260	259	432	29⅝	
4	Kolába	...	⅞	...	14¼	293	630⅝	88	606¼	382	596⅞	
5	Bijápur	...	...	...	...	155	75⅜	...	364	155	439⅜	
6	Ratnágiri	...	47⅞	...	...	19	600⅝	..	...	19	600⅝	
	Total ...	...	48⅘	...	126⅑	1,819	22⅜	3,411	512⅗	5,230	534⅑	

KA'NARA.

3. No changes occurred in Kánara, but forest-lands, aggregating 7,595 acres 3 gunthás in Sirsi, and 974 acres 7 gunthás in Kumta, were notified under Section 4 of the Forest Act.

4. The Forest-Settlement-Officer sent in reports on 21 villages of Honávar, 16 of Kumta and 46 of Sirsi, aggregating 89,244 acres, and these papers are now before Government.

5. In the Haliyál Sub-division, 108 miles of boundary were surveyed and demarcated with boards let into trees.

BELGAUM.

6. In Belgaum, 2 square miles 319 acres of the Khánápur Sub-division were brought under Section 19 of the Act, and 111 acres 37 gunthás of the Belgaum Sub-division were excluded from protected forest.

7. 308 square miles of the Khánápur forests, which were notified under Section 34 of the Act in 1879, and about which a fresh enquiry and settlement had been ordered, were, on further consideration, finally constituted reserved forest.

DHA'RWA'R.

8. 3,866 acres 23 gunthás of forest-lands of the Hubli-Sub-division were notified under Section 4 of the Act.

KOLA'BA.

9. In Kolába, 28 gunthás of the reserved forests, and 14 acres 21 gunthás of the protected, were disforested. The forest settlement-work was brought to a close in 1887-88, but the orders of Government on the settlement-reports of Nágothna, Pen and Roha, sent in during that year, are still awaited.

BIJA'PUR.

10. The reports on the settlement of the lands in Bijápur, which were sent in by the Forest-Settlement-Officer, in 1887, had not gone up to Government by the end of the year under report. They were returned by the Commissioner, S. D., in May last, because the areas given did not exactly tally with the areas shown in another report by the Divisional Forest-Officer on "fuel and fodder-reserves".

11. 'A report on lands selected by the Divisional Officer for "fuel and fodder-reserves" along the East-Deccan Railway was submitted to Government through the Commissioner. The area which it is proposed to take up for this purpose amounts to 14,568 acres, and appears to consist of forest-clad land not suitable for permanent cultivation.

RATNA'GIRI.

12. In Ratnágiri, 47 acres and 23 gunthás were excluded from the reserved forests.

EXPENDITURE.

13. The expenditure on account of forest-settlement and demarcation during 1888-89 amounted to Rs. 8,521 as shown below :—

	Rs.
(1) Salaries and allowances of a Forest-Settlement and Demarcation Officer, not charged against the Forest Department ...	1,850
(2) Salaries and travelling allowances of the establishments employed under the Forest-Settlement-Officer, and contingent expense charged to "Forests"	2,801
(3) Cost of boundary-survey and demarcation charged to "Forests".	3,870
Total ...	8,521

14. The work actually effected during the year, which is represented by the above expenditure, comprises—

A.

'The final settlement of—

(1) 89,244 acres in Kánara—proposals require sanction of Government.
1,599 acres in Belgaum—sanctioned by Government.

Total ... 90,843 acres, or 142 square miles, at a cost of Rs. 32·75 per square mile.

B.

The demarcation of 103 miles of boundary at a cost of Rs. 35·83 per mile.

GENERAL REMARKS.

15. Mr. Wingate, of the Revenue-Survey, was the only special officer employed for forest-settlement, and a great portion of his time was taken up with land-revenue-settlement. I am given to understand that the latter work will henceforth be very light and that progress in Kánara will be accelerated proportionately.

16. The maps of the whole area of forests in Kánara have not yet been issued, so that the figures of area are approximate only. Of the total estimated area, 789 square miles have been finally dealt with, partly as reserved, partly as protected; and the remaining area, or about $\frac{4}{5}$ths of the whole, has still to be settled under Chapter II., or made protected under Chapter IV. In 1879, the whole was gazetted under Chapter V.

17. In the other districts of the Circle what remains to be done is :—

Dhárwár.

(1) The settlement of 3,867 acres of new "Fuel and fodder" reserves, recently notified under Chapter II. (Government Resolution No. 3122 of 18th May 1888).

(2) The conversion of the areas, originally protected under Chapter IV., into reserved forest (Government Resolution No. 6066, dated 19th August 1889).

Belgaum.

(1) The settlement of 39,239 acres of land (selected subsequently to the original forest-settlement) in the Khánápur Táluka.

(2) The conversion of the areas, originally protected under Chapter IV., into reserved forest (Government Resolution No. 6066, dated 19th August 1889).

Bijápur.

The settlement of the proposed "fuel and fodder" reserves, aggregating 14,568 acres.

18. The statement marked A in the Appendix, shows the results of settlements sanctioned by Government. It does not include work, finished by the Forest-Settlement-Officers, but not sanctioned by Government up to the 31st March last. In the estimate of the work still to be done, it is necessary to take into account work accomplished but not yet sanctioned.

19. There appears to be no reason why the whole of the field-work for the districts outside Kánara should not be completed during the next two working-seasons, as a special officer has been appointed to do the settlement of Dhárwár and Belgaum.

CHAPTER II.

SURVEYS AND WORKING PLANS.

I.—SURVEYS.

20. During the year a party of the Topographical Survey of India, under Colonel Pullan, was placed entirely at the disposal of the Bombay-Government

for forest-surveys. The standard-scale was fixed at 4 inches to the mile, and all forests surveyed were surveyed on that scale.

21. Work was continued in the Northern Division of Kánara, and 132·75 square miles are reported by Colonel Pullan to have been completed.

22. The expenditure for the year was Rs. 25,200, so that the cost of the completed detail-survey, together with the advance-work accomplished, came to Rs. 190 per square mile. During the previous year, the cost came to Rs. 250. The past year's results are, therefore, so far favourable that the cost per square mile was considerably less than that of the previous year, but the rate is still very high and represents about two years' average net revenue.

23. The survey was carried out on the same system as that adopted during the previous year.

II.—WORKING PLANS.

24. Messrs. Bell and Oliver, Assistant-Conservators, continued the enumeration of the forests which it is proposed to tap by means of a railway or tramway.

25. Mr. Bell measured the diameters of all trees over 6 inches in diameter on 2,268 acres, and Mr. Oliver those on 3,554 acres. These test-plots represent an area of 117,414 acres of forest.

26. The comparative smallness of the area examined by Mr. Bell may be attributable to the greater difficulty of the ground.

27. The justification of the proposed railway rests mainly on the quantity of teak annually exploitable. The quantity of other wood is very considerable, and much greater than the amount required for the proposed railway-scheme.

28. The calculations have not yet been completed, but it appears probable that a yield of 2,300 teak-trees, over 24 inches in diameter, estimated to contain 3,900 tons of 50 cubic feet per ton, could safely be exploited annually from the forests east of the Gund-group, which is very difficult to get at. These 200,000 cubic feet of teak represent a much larger annual yield than has ever yet been exploited from the forests of the Northern Division of Kánara, and it would probably be difficult to get transport to carry out the work in the ordinary way by means of bullocks and carts. About 120,000 cubic feet is the usual quantity of teak exploited, and even this quantity is exploited with difficulty because only a certain class of men can be induced to undertake the work in the heart of the forests. A rail, or tramway, will, therefore, be necessary if a yield of 200,000 cubic feet is to be extracted.

29. Mr. Bell was assisted by Mr. Sátáráwála, Acting Sub-Assistant-Conservator, until the middle of December, when the latter fell seriously ill and did not return during the rest of the working-season. His place was taken by Mr. Sheshu Manju, Sub-Assistant-Conservator.

30. Mr. Oliver was assisted by Mr. Haripad Mitra, who, however, soon left on account of illness, and did not return during the working-season.

CHAPTER III.

PROTECTION AND IMPROVEMENTS.

ESTABLISHMENT.

31. No change was made in the existing permanent staff which was as usual supplemented by a temporary establishment. Proposals for a re-organization of the superior and subordinate staff were sent in on 25th June and 7th August 1888 as ordered by Government.

BREACHES OF THE LAW.

32. The number of prosecutions disposed of by Magistrates is as follows :—

No.	Divisions.	1887-88.			1888-89.			Percentage of Failures.	
		Cases in which conviction was obtained.	Cases in which conviction failed.	Total.	Cases in which conviction was obtained.	Cases in which conviction failed.	Total.	1887-88.	1888-89.
1	Northern Division of Kánara	13	5	18	11	2	13	28	15
2	Central Division of Kánara	9	1	10	5	3	8	10	37
3	Southern Division of Kánara	11	6	17	9	9	18	35	50
4	Belgaum	7	6	13	11	1	12	46	8
5	Dhárwár	7	2	9	5	1	6	22	16
6	Kolába	22	8	30	45	9	54	26	17
7	Bijápur	1	3	4	8	3	11	75	27
8	Ratnágiri	5	2	7	4	3	7	28	42
	Total ...	75	33	108	98	31	129	31	24

33. The number of cases for the Circle shows an increase of 21, while the percentage of failure decreased from 31 to 24. The increase in the number of cases occurs almost entirely in Kolába where there were 15 cases of illegal *dáhli* cultivation and of thefts of wood from the forest reserves adjoining *dhára*-lands. The Divisional Officer complains, that fellings in *dhára*-lands are used as a cloak for raiding in Government jungles, and that, until the rules under Section 41 of the Forest Act are amended, thefts of this nature will be very difficult to prevent.

34. But there is also reason to suspect that the forest subordinates connive at illicit practices and one range-forester's conduct was so unsatisfactory that he had to be degraded and transferred to Kánara, while another had to be transferred to another division.

35. The Kolába-Division, owing to the peculiarities and varied forms of tenure existing there, is certainly the most difficult to protect of all the divisions of the Southern Circle; at the same time it is also by far the most strongly manned. Yet, in spite of the great number of guards, protection appears to be worse there than in any other part of the district, and I think this fact goes far to prove the argument that the great desideratum is not so much an increase in the number of guards as an improvement in the quality, and an increase in the number, of superior officers who supervise them.

36. A case in Belgaum deserves special notice, in which 2 patels and 3 forest-guards were sentenced to imprisonment for terms varying from six months to one year, for having taken bribes in the execution of their duty in connection with the collection of grazing fees.

37. The following cases were compounded :—

No.	Division.	1887-88.			1888-89.				
		Number of cases commuted.	Amount of fines recovered.		Number of cases commuted.	Amount of fines recovered.			
			Rs.	a. p.		Rs.	a.	p.	
1	Northern Division of Kánara.	22	55	14 10	20	37	9	2	
2	Central Division of Kánara ...	1	2	0 0	9	92	9	7	
3	Southern Division of Kánara.	32	342	0 0	109	401	0	0	
4	Belgaum	37	114	9 10	62	307	12	11	
5	Dhárwár	55	103	8 4	60	148	12	11	
6	Kolába	140	515	0 7	194	855	2	3	
7	Bijápur	310	231	6 6	89	174	15	3	
8	Ratnágiri	55	97	13 10	56	252	11	3	
	Total ...	652	1,462	5 11	599	2,270	9	4	

38. A far greater number of cases was compounded in Belgaum and the Southern Division of Kánara, than during the previous year, and this was, apparently, partly due to the new system of offering rewards to informers (under Government Resolution No. 8568, dated 16th December 1887), and partly to increased activity on the part of the forest officials. Kolába also shows an increase, where many cases of illegal *dáhli* cultivation are reported to have been compounded. The great decrease in Bijápur is not ascribable to any particular cause.

39. A statement showing the number of cases compounded or taken into Court, required by Government Resolution No. 3527 of 2nd May 1884, is given below:—

No.	Divisions.	Taken into Court.		Compromised under Section 67.		Total number of cases.	
		1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
1	Northern Division of Kánara	18	16	22	20	40	36
2	Central Division of Kánara	10	13	1	9	11	22
3	Southern Division of Kánara	17	55	32	109	49	164
4	Belgaum	13	13	37	62	50	75
5	Dhárwár	9	6	55	60	64	66
6	Kolába...	35	58	140	194	175	252
7	Bijápur	5	14	310	89	315	103
8	Ratnágiri	7	7	55	56	62	63
	Total ...	114	182	652	599	766	781

40. Of the 182 cases taken into Court, 53 were pending at the close of the year.

FOREST FIRES

41. Were as prevalent as ever. Nearly all were no doubt caused by incendiaries, and, in two or three instances, offenders were detected in the act and punished.

42. The area, for the fire-protection of which special measures were adopted in the three Kánara-divisions, and those of Belgaum, Dhárwár and Kolába, amounted to 997 square miles; and 812 square miles 121 acres are reported to have been successfully protected at a cost of Rs. 3,490; the cost per acre of jungle attempted to be protected comes to 1·04 pies; but if the area reported to have been successfully protected alone be considered, the cost comes to 1·2 pies per acre.

43. The following facts no doubt militated against good results:—

(1) The unfavourableness of the season owing to the late setting-in of the summer-rains.

(2) The up-set of the original plans of operation at the last moment, owing to reduction by Government of the proposed expenditure.

(3) Enclosing too large an area by one fire-line in many cases.

44. The reported details of fire-protection are given in Form No. 51. It is impossible to place implicit reliance on these figures. From what I saw I would certainly say that the greater part of the specially-protected area was burnt, but the return shows that only 91,007 acres out of a total of 281,709 were burnt in the Northern Division. The correctness of the returns for the Central Division is still more doubtful, as fires were very prevalent there this year and frequently got into the specially-protected area.

45. That the greatest kindness and consideration on the part of Government—the granting to the rayat of the privilege to help himself to every thing he can possibly need in the form of forest produce—will not effect anything, is quite clear from the behaviour of the people in Kánara.* In spite of repeated entreaties, on the part of Government-officers, during the last twenty years, incendiarism is as prevalent in Kánara as in any part of the Circle in which privileges are confined to the collecting of dry firewood for domestic use.

46. That something can be done without the villagers remaining passive, I do not deny. We may be able to protect small areas at great expense, but nine-tenths of the deciduous forest will always be burnt, and its very existence as timber-forest endangered, by a handful of ungrateful and selfish men. If incendiaries could be easily detected, it would be a different matter, but it is easier to find a needle in a haystack than to detect an incendiary in the compact forest areas of Dhárwár, Belgaum and Kánara.

47. To remove the plague, very drastic measures need not perhaps be resorted to, but the immediate self-interest of the villagers must be brought into play. To tell the rustic—or, for that matter, the better-educated classes—that, unless he desists from firing the jungles, a hundred years or more hence his descendants may be deprived, as a natural consequence of his action, of many advantages he now derives from the forests, has no meaning for him whatever, the contingency is far too remote for his serious consideration.

48. Government have accepted the principle here enunciated and directed** that where fires are due to the co-operation, connivance, or gross negligence of the villagers, free grazing should be stopped for one year if one-third of the area has been burnt. But the application of this rule would be ineffectual throughout the forests of the Southern Marátha Country, because, practically, there is no free grazing. In forests, in which the fee *must* be paid for an animal, if it is to be grazed at all, because only that payment will open to it the grazing in an area sufficient for its wants, the closing of a comparatively-insignificant area (utterly insufficient to meet the grazing-requirements of the cattle of the village to which it belongs) is no penalty on the owner. In Kolába, and in some parts of the Northern Circle, grazing has hitherto been *free*, and, in such cases, the application of the rule would be a real punishment and equivalent to the one, which, in the 39th paragraph of my last administration-report, I submitted for the consideration of Government with a view to its being applied to the forests of the Southern Marátha Country.

** Government Resolution No. 1942 of 24th March 1888.

49. The extreme importance, even from a purely financial point of view of protecting the forests from fire is forcibly demonstrated by a comparison of the growth of teak in areas which have been continuously protected with that of teak growing in any unprotected part of Kánara. Compare, for instance, the growth of teak in the fire-protected plantation of Birchi and the neighbouring

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* *Produce which may be taken without permission free of charge.*

(1) Bámbus.

(2) Junglewood for small-houses, huts, chappers, cattle-sheds, &c.

(3) Dry-wood for fuel.

(4) Reeds and grass for manure.

(5) Thorns and brush-wood and stakes for hedges and dams.

(6) Wood for agricultural implements, carts, sugar-cane-mills, grain-mills, &c.; earth and stones.

(7) The clearing away of all small brush-wood and thick low-jungle within 50 feet of the boundaries of cultivated lands.

Produce which may be granted free on permission.

(8) Deads ago and other palm-trees for water-courses, &c.

(9) Large wood for repair of private houses.

(10) Large wood for works of public utility, *e. g.* (1) village chaukis, (2) schools, (3) dharmshálas, (4) for covers, fencing, &c., to public wells, bridges over nálás and water-courses.

(11) Bettá-lands free for ráb and firewood, at the rate of 4 to 8 acres of bettá for every acre of garden-land.

forest of Gobrál, which has not been specially-protected and which is frequently burnt:—

Name of Forest.	Average age of trees of the diameter shown in Column 3.	Diameter at 4 feet from the ground.	Rate of diameter increment per annum.	Rate of cubic increment per cent. per annum..
1	2	3	4	5
	Years.	Inches.	Inches.	Feet.
Birchi ...	17	6·45	·35	8·35
Gobrál ...	42	8·00	·17	5·53

50. The inference that may be drawn from the comparison appears to be that fires reduce the diameter-growth to one-half of the normal. Consequently, that the yield of a forest continuously protected from fire would be double that of one not so protected: and that, instead of cutting 200,000 cubic feet of teak-timber annually in the Northern Division of Kánara—the present estimated sustained yield—we might with fire-protection cut 400,000 cubic feet. In reality we should get a great deal more, for a greater number of sound trees would reach maturity if the area were continuously protected from fire. But it does not appear to be at all probable that the forests can continue to yield even 200,000 cubic feet unless fires are kept out.

51. "I have already alluded to the upsetting of the plans for fire-protection owing to the reduction of the proposed grant for that purpose. In some parts of the Circle, fire-paths had to be cleared in December, but the sanctioned budget-estimate was received on the 2nd January 1889, and I then learnt that the grant had been reduced from the proposed sum of Rs. 15,560 to Rs. 11,000. This necessitated my stopping all further fire-protection until I had learnt what works had been already carried out. A fresh allotment to divisions of the sanctioned sum had then to be made, and fresh schemes had to be prepared by the Divisional officers. But before all this could be accomplished, the fires were upon us.

52. The fact that last season was the first one in which fire-protection was attempted on a large scale, no doubt added to the difficulty of protection. The blocks attempted were generally too large for enclosure by one line and interior lines should have formed part of the plan.

53. The only areas that ordinarily escape fire without the adoption of special measures are evergreen forests. It is impossible to give the areas of these evergreens as they have not been measured off from the deciduous areas with which they are intermingled, and it is, therefore, impossible to give the information asked for by the Government of India in the 11th paragraph of their letter No. 816—F, dated 5th August 1889. They cover a comparatively small area and are to be found chiefly on the crest and western slopes of the ghâts almost to the sea-board.

54. An attempt was made to eradicate by burning a species of *Strobilanthes* which has taken possession of large areas on the Belgaum ghâts and which seeded during the year. The attempt was made, at the request of the Director of Agriculture, without much hope of its doing any good as the *bakra* has come up and spread in spite of annually-recurring fires. The villagers agreed to burn the plant, and clear it away from around harda-trees in order that they should not be damaged by the fire, and, therefore, the experiment was sanctioned. The result is not yet known.

GRAZING AND FENCING.

55. The revenue from grazing was Rs. 65,879, Rs. 4,352 more than during the previous year. The increase is mainly in the Belgaum Division where it (Rs. 3,911) is due to the energy of Mr. Murray and his subordinates, and to Mr. Fairlie-Muir, the Collector, who issued stringent orders to the kulkarnis and patels, who collect the revenue, not to delay the collection. In former

years, it has been the custom to allow cattle to continue to graze after the expiry of the permits, on the presumption that fresh permits would be taken out for them in due course. This rule led to great laxness in the collection of fees by the kulkarnis, enabled many graziers who bring their cattle to graze in the forests for a few months only of the dry season, to escape paying the fee altogether, and opened the door to fraud on the part of the kulkarnis and forest subordinates. Last cold weather, notice was, therefore, given that permits could be obtained beforehand for the ensuing season in the districts of Dhárwár, Belgaum and Kánara, but that no animal would be allowed to graze in the forests without a permit. The result has been a very large increase in Belgaum, and there will probably be an appreciable increase in Kánara and Dhárwár. Here are the figures :—

No.	Division.	1888-89, April to March.	1889-90, to 1st November.
		Rs.	Rs.
1	Belgaum	19,495	22,822
2	Dhárwár	16,289	14,814
3	Southern Division of Kánara ...	8,649	8,558
4	Central Division of Kánara	6,676	6,334
5	Northern Division of Kánara ...	6,837	6,351

56. These figures show the results for 1889-90 up to date only, whilst those for 1888-89 are for the whole year.

57. Grazing in Kolába and Ratnágiri has hitherto been free, and in Bijápur, the old system still exists of selling annually the right to pasturage in the forests. As soon as the proposed settlement of Bijápur receives the sanction of Government, the fee-system—which is the more acceptable mode of sale to the people, and the more profitable one to Government—will be introduced.

58. In Dhárwár, the forests of the Kod, Ránebennur, Bankápur and Karajgi-Sub-divisions, aggregating 37,445 acres, were closed to grazing; in Kolába 4,407 acres were closed; in Bijápur 5,235 acres of the Bagalkot and 8,305 acres of Bádámi forests were selected for closure; and in Belgaum 12,167 acres were closed to grazing.

NATURAL REPRODUCTION.

59. By seed was bad, owing to the prevalence of fires.

60. Reproduction from stools in the firewood-coupes was good.

61. The only obstacles to natural reproduction by seed in the greater part of the forests of Kánara, are fires and, in a less degree, grazing. The most valuable forests of that district are opening out, and it is only seedlings in evergreen-groups, and in others in which the predominant species is *jámbá* (Inga xylocarpa), that seedlings are able to make way from the first against fires.

62. The same remarks apply to the western parts of Belgaum and of Dhárwár.

63. Innumerable seedlings come up during the rains, in situations less favourably situated for their survival, and are burnt down during the hot weather. In some cases, the roots survive, and then a fresh shoot is sent up at the beginning of the ensuing rains, which, in its turn, is burnt down in due course, and so on until the plant either succumbs or establishes itself after a fashion.

64. In Kolába and Ratnágiri, the jungles consist chiefly of coppice, the young shoots of which, although retarded in their growth and damaged by fires, are not easily killed outright.

65. In Bijápur, and in the eastern portions of Belgaum and Dhárwár, the forests consist mostly of scrub and small stuff up to 20 feet in height, the

rainfall is scanty, and the ground stony and covered with spear-grass. The conditions are, consequently, all unfavourable to natural regeneration by seed. Thorns and cactus are almost the only species that can propagate themselves in open ground by seed in the worst parts of the Circle; but, where thorny cover is pretty dense, it has been found, in the tálukas of Bádámi and Bágalkot of Bijápur, that tree-species which do not make much demand on the soil, and stand shade when young, such as *nim* and sandal, can be got to grow by simply sowing their seeds broad-cast amongst the bushes. Sheep and goats* are very numerous in all the eastern forests and are a great hindrance to natural reproduction, as they are only excluded from a portion of the forest-area. The very small fee of half-an-anna, which is charged for the right to pasture one of these animals for one year, encourages their increase within forest-limits, and I certainly think it would be a good plan to raise the fee to 4 annas if it is not thought expedient to exclude them altogether. They are bred chiefly for sale. A goat can now be fed for the market, entirely at Government-expense, for one year for half-an-anna, and it can then be sold for 12 annas or a rupee. For horned cattle, which do much less damage to the forest, 2 annas a head are paid.

ARTIFICIAL REGENERATION.

66. In the Northern Division of Kánara, 13,000 casuarina-seedlings were planted out on 11 acres of sandy waste. Of this number, a few died owing to drought, but the general state of the plantation, which is now 20 acres in extent, is good. A nursery containing 10,000 seedlings was made.

67. In the Central Division of Kánara, nurseries of teak, harda, matti and hone-seedlings were made near several watch-houses by the guards in charge: and about 2 cart-loads of seeds of various kinds were sown broad-cast under dying karvi (*Strobilanthes*), but, as the ground was subsequently traversed by fire, good results cannot be anticipated. In the Ankola-Subdivision, 2,858 teak, 1,000 casuarina, and 230 harda-plants were put out. In the Kumta-Subdivision, out of 1,275 casuarina, divi-divi and harda-plants, planted in previous years on old *kumri*-lands, about 730 have survived.

68. In the Southern Division of Kánara, Bijápur and in Ratnágiri, a quantity of seeds was also sown broad-cast by forest-guards. In Ratnágiri, a nursery, containing 15,603 seedlings of various kinds, was made.

69. The experiment made last year at Jaknur in Bijápur to grow plants in the open without watering them was not a success. Of the 3,392 plants put out only 550 survived.

70. In Dhárwár, a few small areas were planted with anjan (*Hardwickia*), but the plants died from drought.

71. Altogether, a sum of Rs. 3,595 was expended on plantations during the year.

72. As a means of maintenance and improvement, importance is attached to the filling-up by guards of gaps caused by fellings in jardinaged forests. Old stumps of girdled trees do not throw out shoots when the trunks are cut down. But only superior species are girdled, and the drain on teak is so great that it must gradually disappear unless special means are adopted for favouring it in the struggle for existence. The most suitable men to employ for this purpose are evidently the guards, who should know where gaps have occurred, and can afford the time to attend to desultory work of this nature. The débris of branches of trees just felled affords good protection from animals, although somewhat increasing the risk of damage by fire, and I have ordered that, wherever a timber-tree in jardinage is cut out, two or three seedlings of teak, or other suitable tree of a superior kind, should be put down in the entanglement of branches which are not saleable. In the heavy timber-forests of Kánara seedlings from self-sown seeds can nearly always be obtained close to the sites of fellings, from spots in which they could not possibly all survive owing to their own density, the denseness of the cover over them, or other cause. In this manner, I think that an immense amount of useful work can be done by the guards without in any way interfering with their other duties.

* Since the close of the year, the grazing of goats in Bijápur forests has been prohibited.

73. So also in firewood, and worthless scrub-jungle much good can be effected by guards in planting or sowing inferior species in the more open parts and superior species in suitable places where the cover is denser. A beginning in this direction has been made by the officers in the Central Division of Kánara, and in Dhárwár, Bijápur and Ratnágiri. In future greater attention will, I hope, be paid to the subject in other divisions.

COMMUNICATIONS AND BUILDINGS.

74. The amount expended on "roads and bridges" was Rs. 1,973, on "buildings" Rs. 4,280 and on "other works" Rs. 486.

75. In the Northern Division of Kánara certain forest cart-tracks were repaired (Rs. 71-11-0); 2 new watch-houses were built (Rs. 600) and the range office at Supa was completed (Rs. 199).

76. In the Central Division of Kánara the Kánnigéri-Udámáki and Hittálkárgadde-Mágód roads were repaired (Rs. 525) and two new watch-houses were built (Rs. 600).

77. In the Southern Division of Kánara the roads between Manchikéri and the Singanhalli Depôt, and between Kátur and Umachgi were repaired (Rs. 434). A new watch-house was built at Gersappa (Rs. 300), and a building for the Divisional Forest Office at Sirsi (Rs. 950).

78. In Belgaum, the Nágargáli-Halshi forest road was repaired (Rs. 915) and a new *náká*-house was built at Gokák (Rs. 188-12-0).

79. In Dhárwár, a *náká*-house was built at Kalkundi (Rs. 300), and the rest-house at Devikop was repaired (Rs. 200).

80. In Ratnágiri, the Bánd-road was put in repair as usual (Rs. 25-2-0).

81. It may perhaps appear to any one unacquainted with the district that communications are neglected in the Southern Circle. This is, however, not the case. With the exception of Kolába and Ratnágiri, where creeks and rivers take the place of roads to a very great extent, the whole of the forest area is extremely well provided with roads, for the repairs of which large quantities of wood are given free every year from the forests. Even the proposed line of railway to Pótóli will not open up forests hitherto unexplored, but will run for its whole length (21 miles) through forests which have been worked for many years by means of carts. If it is to open up forests to the market above-ghát, it will have to be taken 15 or 20 miles further, across the Káneri-river, to Gund.

82. The survey of a line for the proposed forest railway which is intended to tap the forests between Nágargáli, on the Southern Marátha Railway, and Gund, was carried as far as Pótóli. Pótóli is about 21 miles from its junction with the existing railway, and Gund about 40 miles. The rough estimate of the yield of the tract traversed by the proposed line will be submitted in as few weeks.

CHAPTER IV.

YIELD AND WORKING.

83. The following shows the yield of the forests of the several divisions of the Southern Circle for the two years of 1887-88 and 1888-89:—

Description of Produce.	1887-88.		1888-89.	
	Number.	Cubic feet.	Number.	Cubic feet.
Teak	...	256,596	...	250,576
Do. poles...	10,788	...	23,028	...
Do. pieces for sleepers ...	46,164	...	17,319	...
Do. adzed sleepers	2,009	...	90	...
Thinnings from teak trees ...	...	...	Stacks 13	...
Blackwood	...	7,999	...	18,246

	Description of Produce.	1887-88.		1888-89.	
		Number.	Cubic feet.	Number.	Cubic feet.
Northern, Central, and Southern Divisions of Kánara	Blackwood poles	...	...	5	...
	Do. pieces	...	...	4	...
	Do. plants	1	...	16	...
	Junglewood	...	397,605	...	314,090
	Do. poles	7,313	...	2,529	...
	Do. rafters	...	...	1,496	...
	Do. pieces	...	...	687	...
	Do. stakes	...	...	635	...
	Gayaliwood	100	...	...	...
	Mango trees	2	...	...	...
	Baini trees	390	...	391	...
	Savri or Moi trees	...	...	242	...
	Palmyra trees	111	...	117	...
	Heart of palm ... Loads.	85	...	112	...
	Jaráitiwood logs	...	...	320	...
	Do. pieces	1,089	...	1,358	...
	Do. stacks	153	...	44	...
	Firewood	...	1,062,965	...	1,499,793
	Do. ... ... Tons.	21,777	...	8,693	...
	Do. ... ... Maunds.	...	...	2,349	...
	Do. ... ... Stacks.	635	...	539	...
	Do. ... ... Cart-loads.	7,904	...	6,629	...
	Do. ... ...Head-loads.	193,473	...	156,424	...
	Charcoal ... ... Maunds.	332	...	304	...
	Do. ... ... Sacks.	...	...	215	...
	Bámbus	4,197,415	...	3,853,316	...
	Do. small	3,200	...	775,325	...
	Sandalwood ... Khandis.	111-6-9	...	73	...
	Do. roots and pieces ...	...	...	2,168	...
	Do. white wood chips...Bags.	12	...	26	...
	Do. trees	...	...	189	...
	Grass ... ... Bundles.	78,900	...	51,530	...
	Thorns ... ... Carts.	11	...	24	...
	Props for fencing	214	...	...	...
	Myrobolans ... Khandis.	3,987	...	4,356	...
	Shigekai ... ... Do.	125	...	15	...
	Do. bark	Khandis 900-66	...	Maunds 2,534	...
	Rattan ... .. Head-loads.	709	...	...	...
	Cane ... ... Do.	...	...	535	...
	Creepers for baskets ... Do.	142	...	...	...
	Reeds	34,450	...	10,500	...
	Karvi ... ...Head-loads.	587	...	2,480	...
	Hadchari leaves ... Do.	53	...	29	...
	Earth	...	...	...	...
	Do. ... ... Cart-loads.	92	...	69	7,350
	Stones	...	...	...	12,050
Belgaum Division.	Teak logs	...	203	...	...
	Do. poles and pieces	...	39,950	...	...
	Branch wood from above ...	2,596	...	310	1,533
	Slabs	2,335	...	75	...
	Blackwood logs	244	...	351	...
	Do. poles	66	...	63	...
	Junglewood logs	...	11,278	...	2,040
	Do. poles and rafters ...	...	21,037	...	12,797
	Bábul trees	...	750	...	629
	Samplewood	...	5,440	...	...
	Agricultural implements ...	9	...	...	...
	Firewood (running fuel) ...	...	2,893,020	...	...
	Do. lighting wood ...	...	2,000	...	1,657,004
	Do. ... ... Stacks.	...	3,901,600	...	131,741
	Do. ... ... Cart-loads.	4,449	...	...	67,450
	Do. ... ...Cattle-loads.	721	...	3,320	132,800
	Do. ... ... Heads-loads	115,633	...	536	1,072
				127,628	384,504

	Description of Produce.	1887-88. Number.	1887-88. Cubic feet.	1888-89. Number.	1888-89. Cubic feet.
Belgaum Division—*continued.*	Charcoal ... ... Maunds.	532	...	144	...
	Bámbus	44,909	...	59,753	...
	Do. small	614,007	...	504,646	...
	Sandalwood	...	20	...	...
	Do. pieces	...	20	...	30
	Grass ... ... Bundles.	415	...	623	...
	Toddy trees, sale of	4	...	18	...
	Do. tapping fees on ...	61	...	115	...
	Myrobolans ... Khandis.	6,923	...	6,655	...
	Shigekai ... ... Do.	300	...	760	...
	Cinnamon ... ... Maunds.	400	...	2,140	...
	Tamarind ... ... Do.	546	...	102	...
	Gum ... ... Do.	1,050	...	292	...
	Honey ... ... Do.	108	...	291	...
	Coffee ... ... Seers.	10	...	6	...
	Caster-oil seeds ... Do.	...	...	12	...
	Rátan ... ...Head-loads	148	...	241	...
	Banadurgi leaves ... Do.	83	...	310	...
	Karvi ... ... Cart-loads.	228	...	173	...
	Tarwad bark ... Do.	...	...	3	...
	Do. Animal-loads.	132	...	137	...
	Do. ... ...Head-loads.	503	...	806	...
	Thorns ... ... Cart-loads.	90	...	88	...
	Do. ... Animal-loads.	115	...	93	...
	Do. ... ...Head-loads.	279	...	1,655	...
	Earth ... ...Cattle-loads	...	...	1,352	...
	Do. ... ... Baskets.	21	...	41	...
	Stones	...	1,019,536	...	204,757
	Do. ... ... Cart-loads.	8,497	...	10,031	...
	Do. ... ...Cattle-loads	3,983	...	5,188	...
Dhárwár Division.	Teak rafters	13,570	...	7,718	...
	Junglewood rafters	1,516	...	896	...
	Jaráitiwood do.	21,401	...	18,442	...
	Sleepers	32	...	32	...
	Do. unsound pieces ...	37	...	...	...
	Do. slabs	11	...	...	...
	Ulkas	1,000	...	...	...
	Firewood ... ... Stacks.	10,982	...	11,394	...
	Do. ... ... Cart-loads.	224	...	285	...
	Do. ... Animal-loads.	2,583	...	1,740	...
	Do. ... ...Head-loads	18,274	...	21,819	...
	Bámbus	321,709	...	5,60,341	...
	Do. pieces	...	...	7,424	...
	Do. ... ... Cart-loads.	11	...	164	...
	Sandalwood ... Billets.	2,148	...	1,022	...
	Do. pieces	38	...	90	...
	Do. chips and saw dust. Maunds.	7	...	11	...
	Grass ... ... Loads.	...	...	111	...
	Do. ... ... Pullies.	3,805	...	8,519	...
	Hirda ... ... Khandis.	5-15-19	...	3¼	...
	Thorns ... ... Loads.	2,076	...	1,875	...
	Earth ... ... Do.	16	...	100	...
	Stones ... ... Do.	4,419	...	1,917	...
Bijápur Division.	Timber ... ... Pieces.	20	...	7	...
	Do. Jantis ...Head-loads.	4,189	...	7,265	...
	Firewood ... ... Cart-loads.	2,542	...	3,026	...
	Do. ... Animal-loads.	16,615	...	32,051	...
	Do ... ... Head-loads.	94,903	...	77,176	...
	Do. ... ... Pieces.	20	...	150	...
	Leaves ... Animal-loads.	131	...	6	...
	Do. ... ...Head-loads.	2,316	...	6,220	...
	Tarwad bark Animal-loads.	298	...	400	...
	Do. ... ...Head-loads.	672	...	650	...

	Description of Produce.	1887-88. Number.	1887-88. Cubic feet.	1888-89. Number.	1888-89. Cubic feet.
	Thorns ... ... Stacks.	678	...	450	...
	Do. ... ..Head-loads.	389	...	500	...
	Stones	...	259,716	...	127,017
	Do. ... ... Cart-loads.	28,962	...	2,165	...
	Do. ... Animal-loads.	1,334	...	5,800	...
	Stones ... ...Head-loads.	1,872	...	36,291	...
	Earth ... ... Cart-loads.	550	...	825	...
	Do. ... Animal-loads.	5,303	...	5,667	...
	Do. ... ...Head-loads	2,972	...	14	...
Kolába Division	Teak trees	116,136	...	100,905	...
	Do. beams	790	...	401	...
	Do. 1st class	3,674	...	2,138	...
	Do. 2nd do.	4,951	...	5,062	...
	Do. 3rd do.	6,753	...	6,928	...
	Do. 4th do.	3,688	...	3,477	...
	Miscellaneous	5,678	...	6,425	...
	Do. pieces	2,488	...	309	...
	Firewood Kowl Khandis ...	27,000	...	23,000	...
Ratnágiri Division.	Teak beams and sotas	1,115	...	1,342	...
	Do. poles, 1st class	3,687	...	2,869	...
	Do. 2nd do.	5,072	...	3,828	...
	Do. 3rd do.	5,199	...	6,950	...
	Do. 4th do.	2,929	...	5,284	...
	Firewood ... ... Khandis.	422	...	550	...
	Myrobolans ... Maunds.	42	...	34	...

84. The order of Government to show all quantities in the statements in cubic feet arrived too late to enable me to render the past year's account in the desired form.

NORTHERN, CENTRAL AND SOUTHERN DIVISIONS OF KANARA.

85. The large teak exploited was 6,020 cubic feet less than during the previous year, and the quantity of large junglewood exploited fell off to the extent of 83,515. A greater quantity of dead wood was brought in, but no contracts for cutting girdled wood were given out as there was a sufficient surplus of the previous year in stock to make up the proposed yield; hence the decrease in the quantity brought in.

86. The number of teak-poles exploited was greater by 12,240 and the yield of blackwood was greater by 10,247 cubic feet.

87. The outturn of teak-pieces for sleepers fell off to the extent of 30,734, the demand for sleepers by the Southern Marátha Railway Company being now very limited.

88. The yield of sandalwood-timber in the Central and Southern Divisions was less than the quantity brought in during 1887-88 by 38 khandis, but 2,158 roots and small pieces in those divisions and 189 trees in the Northern Division were brought in.

89. The firewood exploited was almost equal to the previous year's. The myrobolan-collection shows an increase of 369 khandis, while the sál was less by 110 khandis.

90. Of large and small bámbus 428,026 more stems were extracted during the year than in the previous one. The increased consumption can only be ascribed to the facility for export afforded by the new railway.

BELGAUM.

91. The quantity of running fuel extracted for the Southern Marátha Railway-Company shows a decrease of 1,235,926 cubic feet. It was 1,657,094 cubic feet against 2,893,020 in 1887-88, but the lighting fuel brought in for the Company was more by 129,740 cubic feet. The decrease in the former item appears to be entirely due to the great difficulty experienced in obtaining transport.

92. The annual requirements of the line are estimated at 45,000 tons or over 3,000,000 cubic feet by the Locomotive Department. Last year's production amounted to 24,000 tons. Mr. Murray reports that "the cause of the collapse was the difficulty of obtaining transport from the forests to the depôts. In order to supply the required amount of fuel, at least 250 carts must be daily employed in carrying the wood, and, as no grass, nor fodder, of any kind is obtainable on the spot, at least 40 or 50 more are required for bringing supplies from elsewhere. It is not at all an easy matter to collect so many carts out in the jungle, nor, when collected, to keep them together. A sudden epidemic of jungle-fever causes a panic, or one of the constantly-recurring native festivals intervenes, and away go the cartmen for a week or two at a time."

"The lead from the forest to the railway was much greater than in the preceding year and will go on increasing year by year, necessarily involving the employment of more and more carts."

93. To meet this difficulty, proposals for a 24-inch tramway, to be worked by bullocks, were submitted in October, 1888. But Government thought that the work should be carried out by the Railway-Company, and referred the question to the Agent. Since then I have heard nothing more of the project officially, but have reason to believe that the Railway authorities are unwilling to undertake the work, their estimate of the cost being very high owing to their desire to have the standard gauge and to effect the haulage by means of locomotives.

94. Unless transport by means of rails be substituted for the present mode of exploitation, it will hardly be possible to get out more than 30,000 tons annually and, apart from any other advantages derivable from a tramway, Government will, if expenses be taken at the present rate, lose Rs. 30,000 a year, net, on account of our inability to get out the present estimated requirements of the line, which are sure to increase. There does not appear to be the slightest likelihood of coal supplanting wood-fuel, which, at the present rate of Rs. 4 per ton, is very much cheaper to use than English or native coal.

95. There is a falling-off in the number of firewood stacks exploited for local consumption, the demand having been partly met from what remained of the previous year's cuttings.

96. The yield of myrobolans was about equal to the previous year's. But little teak-timber was exploited during the year, and there was a decrease in the yield of junglewood-logs, poles and rafters from the clean cuttings of the firewood-coupes—always variable quantities. The number of large bámbus extracted shows an increase.

DHA'RWA'R.

97. The yield of teak and junglewood was much less; but a larger quantity of firewood for local use was collected, and 238,632 more bámbus were removed during 1888-89.

BIJA'PUR.

98. In Bijápur the following increases are noticeable: 3,066 head-loads of jantis, 482 cart-loads and 15,436 animal-loads, of firewood; also 102 animal-loads of *tarwad*-bark.

KOLA'BA.

99. The falling-off in the number of teak-poles cut amounted to 16,334. 100,905 trees were removed by contractors, and 24,431 by Government-agency,

the whole number consisting of coppice-stems. The quantity of fuel removed for export was 4,000 kowl khandis less than in 1887-88 owing to a falling-off in the demand.

RATNA'GIRI.

100. The yield of this division calls for no remarks. The forests are poor and require rest.

101. The Kánara saw-machinery worked in all 293 days, or 3 days less than in 1887-88. The number of logs cut up was :—

	1887-88.			1888-89.		
	Logs.		C. feet.	Logs.		C. feet.
Teak	1,419	=	27,279	2,165	=	46,787
Blackwood ...	5	=	37	3	=	49
Junglewood ...	184	=	3,269	337	=	8,118

and the outturn of clean timber was :—

	1887-88.		1888-89.	
Teak logs ... ... Reconverted from stock...	14,790 c. ft. 1,600 „	16,390	23,857 c. ft. 1,331 „	25,188
Blackwood		23	...	14
Junglewood...		1,347	...	2,191
Sleepers		1,306	...	1,604

102. The receipts at the mills amounted to Rs. 47,942 and the expenditure to Rs. 15,199. In 1887-88 the receipts were Rs. 33,077 and the expenditure Rs. 11,159.

103. The increase in the outturn of teak and junglewood, as well as the increase in receipts and expenditure, was owing to a large order from the Southern Marátha Spinning and Weaving Company at Hubli, and to one from the Kolhápur-State for sleepers and scantlings for the Kolhápur-Railway.

104. The permission of Government was obtained during the year to sell the saw-machinery, there being no probability of our being able to work it at a profit. The workshops were therefore closed in June last and the machinery was advertised for sale. As yet no portion of it has been disposed of.

105. In their last review of forest administration in this Presidency the Government of India expressed a wish to have a more detailed description of the modes of exploitation adopted. In Chapter IV. of last year's report, I described the agency employed in exploiting the forests and to some extent the mode of exploitation. The methods employed are jardinage for seedling-forests or other timber-forests, and clean cuttings for firewood-forests. As far as possible, the method of equal areas is being introduced in firewood-forests, but it is not possible to cut over equal areas annually in the case of forests which have to supply a certain quantity of material, such as those which supply the Southern Marátha Railway with fuel. The more eastern forests, which consist chiefly of small and more or less thorny scrub, and some of the better descriptions of forest, too, are exploited on the permit-system, and the people cut and fetch out the wood for sale on payment of a small fee of one anna or less per head-load. This system is no doubt a bad one for the forests, but it is difficult to deprive the people engaged in the trade of a means of livelihood to which they have always been accustomed. Blocks are opened and closed periodically for the exercise of the privilege, but it is quite impossible to protect other parts of the forest traversed by the wood-cutters, or to prevent the cutting of green wood, or the manufacturing of dead-wood. Whenever firewood-cuttings on the principle of clean-cuttings can be advantageously made, people who remove wood by head-loads are obliged to take them from such cuttings.

CHAPTER V.

FINANCIAL RESULTS.

106. The details of the year's transactions are shown in Forms Nos. 58—62.

Year.	Receipts.	Charges.	Surplus or Net Revenue.
	Rs.	Rs.	Rs.
1887-88	14,34,650	7,46,260	6,88,390
1888-89	12,73,554	6,75,601	5,97,953

107. The decrease is due to a smaller quantity of fuel and sleepers having been supplied to the Southern Marátha Railway-Company.

108. The result is an apparent decrease of net revenue of Rs. 90,437, but the real decrease amounts to only Rs. 27,385, because the outstandings of the past year exceed those of the previous year by Rs. 63,052.

109. The cause of this sudden increase of outstandings is not apparent. It occurs chiefly in the Northern Division of Kánara, and the Divisional Officer has been asked to explain his reasons for allowing so large a sum to remain on the books.

110. The following shows the revenue and outstandings at the end of the year:—

Year.	Amount realized.	Balance due to the Department at the end of the year.
	Rs.	Rs.
1887-88	14,34,650	1,36,433
1888-89	12,73,554	1,99,485

111. The following statement shows the receipts and charges for 1887-88 and 1888-89 under each main head :—

Heads of Revenue and Charges.	1887-88.	1888-89.	Increase.	Decrease.
RECEIPTS.	Rs.	Rs.	Rs.	Rs.
I.—Timber and other produce removed from forests by Government agency	10,35,438	8,78,590	...	1,56,848
II.—Timber and other produce removed from the forests by consumers or purchasers	3,84,299	3,87,412	3,113	...
III.—Confiscated, drift and waif-wood..	8,419	1,561	...	6,858
IV.—Revenue from forests not managed by Government...	222	66	...	156
V.—Miscellaneous	6,272	5,925	...	347
Total ...	14,34,650	12,73,554	3,113	1,64,209

Year.	1887-88.	1888-89.	Increase.	Decrease.
CHARGES.	Rs.	Rs.	Rs.	Rs.
A.—Conservancy and Works.				
I.—Timber and other produce removed by Government agency	4,22,999	3,34,836	...	88,163
II.—Timber, &c., removed by consumers or purchasers	8,249	7,038	...	1,211
III.—Confiscated, drift and waif-wood...	131	49	...	82
V.—Rent of leased forest and payments to share-holders in forests managed by Government	10,948	9,476	...	1,472
VI.—Live-stock, stores, tools and plant.	2,144	1,998	...	146
VII.—Communications and Buildings ...	5,291	6,740	1,449	...
VIII.—Demarcation, improvement and extension of forests	45,285	61,191	15,906	...
IX.—Miscellaneous	1,407	1,126	...	281
Total A ...	4,96,454	4,22,454	17,355	91,355
B.—Establishment.				
I.—Salaries	2,01,965	2,05,222	3,257	..
II.—Travelling allowances	35,123	33,170	...	1,953
III.—Contingencies	12,718	14,755	2,037	...
Total B ...	2,49,806	2,53,147	5,294	1,953
Total Charges, A and B ...	7,46,260	6,75,601	22,649	93,308

RECEIPTS.

112. The decrease against I. occurs under "*a* timber," Rs. 1,02,113, which is ascribable to the cessation of demand for sleepers by the Southern Marátha Railway-Company, and under "*b* Firewood," Rs. 37,321, due to a falling-off in fuel supplied to the Railway owing to difficulties of transport. There was also a decrease of Rs. 7,974 and Rs. 9,522 under "*d* Sandalwood" and "*e* Grass and other minor produce," respectively. A quantity of sandalwood was not sold during the year, as reasonable prices were not obtained. The falling-off under *e* was due to the myrobolan-crop in Belgaum being slightly smaller than last year's and to part of the sale-money of the Kánara-crop having been credited in the accounts of 1889-90.

113. Head II. shows an increase of Rs. 3,113, which is met with as follows:—Rs. 2,675, 6,349, 4,352 and 3,257 were in excess of the previous year's receipts on account of "Timber," "Bámbus," "Grazing" and "Minor produce" respectively. The increase was due (1) to better prices obtained for wood in Kolába, (2) to an increased demand for bámbus, (3) to improvement in the collection of grazing fees, and (4) to sale of the right to remove *tarwad*-bark. On the other land, "*I. b.*, firewood," shows a decrease of Rs. 13,520, and this is owing to curtailment of operations in Kolába.

114. The decrease appearing under head III. is due to the fact that, in 1887-88, certain sums realized by the sale of confiscated wood were credited to that head, but in 1888-89 sums similarly realized came under "*I. a.*"

EXPENDITURE.

A.—Conservancy and Works.

115. The decrease under head I. (Rs. 88,163), is owing to a corresponding decrease under the several items of receipts. That under II. (Rs. 1,211) is due

to charges on account of certain temporary establishments, formerly debited to this head, having been transferred to "B. *I. c*," and under V (Rs. 1,472) to smaller payments to Khots in Kolába.

116. The increase under VII (Rs. 1,449) and under VIII (Rs. 15,906) is mainly owing to charges for the construction of forest watch-houses and the Sirsi Divisional Forest Office; for the topographical survey; for forest organization; and for specially protecting certain jungles from fire.

B.—Establishment.

117. The general increase under B., amounting to Rs. 3,341, is owing to the promotion of a first grade Assistant-Conservator to the 4th grade of Deputy-Conservator; to certain charges on account of temporary establishments debited to "*I. c.*"; and to charges on account of forest subordinates' uniform.

118. The following shows the value, calculated at seigniorage rates, of the forest produce granted free :—

No.	Collectorate.	1887-88.	1888-89.
		Rs. a. p.	Rs. a. p.
1	Kánara	18,796 12 8	15,225 10 9
2	Belgaum	1,151 8 7	130 7 5
3	Dhárwár	1,163 12 0	.....
4	Bijápur	.....	.....
5	Kolába	1,007 0 0	94 0 0
6	Ratnágiri	.....	.....
	Total ...	22,119 1 3	15,450 2 2

CHAPTER VI.

GENERAL REMARKS.

FINANCIAL PROSPECTS.

119. The slight fall in the net revenue of the Circle,—amounting to Rs. 27,385, if the difference of the outstanding balances be taken into account,—is not likely to continue. There are signs of increased activity in the wood-market; even the last Kárwár-sales have gone off well, and the results of a rough estimate of the sustained yield of the forests of the Northern Division of Kánara warrant our raising the outturn of teak for the Haliyál-depôt from about 120,000 cubic feet to about 200,000.

120. In addition to this possible increase in the outturn, an increasing demand for junglewood generally is observable, and a better demand for *heddi* is springing up for export to the coast-towns, probably for use as fishing-stakes. The falling-off in the yield of fuel is, as I have already explained, owing to the difficulties encountered in the transport of fuel to the railway. Bámbus and grazing are also sources of increasing revenue: in fact the yield under every head is expanding, and an increase of a lákh of net revenue may be confidently looked forward to in the course of the next two years, provided efficient means are taken for the development of the resources of the forest. In order to effect this object, it will, in the first place, be necessary to construct a tramway (not necessarily a railway on the mètre-gauge, as a 20-inch tram worked by bullocks may possibly be more economical) from Nágargáli, or from Haliyál, or Alnáwar, to Pótóli, a distance of 21 miles for the Nágargáli or Haliyál-route, and of 28 for the Alnáwar-line. Secondly, about 10 miles of tram will be required for the working of the fuel to be supplied to the Southern Marátha Railway, unless the Company undertakes the work itself.

ESTABLISHMENTS.

121. The number of officers on the superior establishment is only just sufficient to meet the requirements of the Circle, if none take leave. I think that three new trained Assistants should now be posted to the Circle. An officer is not competent to hold charge of an important division until he has been three years in the country, so that one joining now might not be really fit to take the place of an officer going on leave for several years, and, in the mean time, there is nobody to take the latter's place. The following statement shows the number of officers in the Circle, the leave which is due to them, and the number of years since they took furlough :—

Name of Officer.	Date of last return from furlough.	Pensionable service, years in round numbers.	Furlough earned, months in round numbers.	Remarks
J. L. L. MacGregor ...	October 1883 ...	18	30	One-fourth active service, less 19 months furlough taken.
G. A. Hight	May 1886... ...	17	16	One-fourth active service, less 28 months' furlough taken.
G. K. Betham	November 1879 ...	20	20	One-ninth active service, less 6 months furlough taken.
W. A. Talbot	May 1887... ...	13	21	One-fourth active service, less 14 months' furlough taken.
W. R. Woodrow	.....	11	33	One-fourth active service. No furlough taken.
H. Murray	.....	7	21	Do. do
T. R. D. Bell	.....	5	15	Do. do
R. P. Ryan	.....	...	...	6 years' service. No leave taken
E. G. Oliver	.....	...	...	2 years' service. No leave taken

FREE GRANTS.

122. It appears from the 18th and 19th paragraphs of his review of my last administration report, that the Commissioner, S. D., misunderstood the meaning of my remarks in respect to the issue of free grants of wood. My object was, in reality, to facilitate the issue of timber to rayats when only required in small quantities, as is generally the case. No mention was made in the report regarding the mode of granting *firewood* free, and I did not suggest any alteration in the present regulations in regard to that commodity. I think this is clear from my remarks in paragraphs 116—120 of that report.

123. What I objected to was the abuses caused by allowing people to help themselves to *timber* without previous sanction. I did not wish it to be inferred from what I wrote (and I do not understand how the inference was possible) that I advocated a curtailment of privileges, but that their exercise should be regulated (without any real hardship to the people concerned) in such a manner that less loss should accrue to the State, and sylviculture, and organization receive that degree of consideration which the due maintenance of the forests appeared to me to demand.

HEALTH, &c., OF OFFICERS AND MEN.

124. The general health of the officers was fair, but Messrs. Bell and Oliver, and all those engaged in organization under them, suffered much from fever, and both the officers named were attacked by dysentery.

125. In the subordinate ranks, fever is always epidemic during the working-season, and probably 25 per cent. of the guards are always incapacitated for work at that time of the year.

126. I am greatly pleased to be able to report favourably on the work of the superior officers serving in the Southern Circle, with the exception of that of Mr. H. Mitra, Sub-Assistant Conservator, who evinced no interest in his work and whose conduct was not satisfactory.

127. The divisional officers have specially brought to my notice the good work done by the following officers :—

Mr. Sátárávála	...	... Acting Sub-Assistant.
Mr. Babaji Jotiba	...	... Forester.
Mr. Ganpat Rege	...	... Ranger.
Mr. Gopal Swamirao	...	... Forester.
Mr. Mahableshvar Nagapa		... Forester.

ITINERARY.

128. On 1st April my camp was at Nágargáli in the Belgaum Division, where I saw the fuel-cuttings for the railway.

129. On the 6th I proceeded to Hémádge, Talewádi, Anmód, and Jagalbet in the Northern Division of Kánara, where I arrived on the 25th and met the Divisional Forest Officer.

130. From Jagalbet, I went to Birchi, Haliyál, Máinál and Belgaum, where I arrived on the 21st May.

131. On the 17th November, I left Belgaum for Bádámi, where I met the Divisional Officer of Bijápur and inspected with him a portion of the area in the Bádámi and Bágalkot-Tálukas, which it is proposed to take up for "fuel and fodder reserves". On the 8th December, I reached Dámbal in Northern Dhárwár, and proceeded *viâ* Sortur, Lakshmeshvar and Sávanúr to Dundshi, where Christmas was spent with the Divisional Officer, Dhárwár. On the 4th January, I moved Camp to Sanvalli, and to Pálá on the 9th.

132. On the 12th, I left the Central Division of Kánara and entered the Southern Division proceeding down the Ghâts *viâ* Yekambi, Sirsi, Sampkhand, Devimani, Kátgál and Chandawar to Honávar in the Honávar Táluka, inspecting on the way certain areas proposed for reserves by Mr. Wingate. On the 27th I left Honávar for Kumta and Sántgál, inspecting on the way the areas in the Kumta-Táluka proposed for reserves by Mr. Wingate, whom I met at Kumta.

133. From Sántgál, I marched up the Nilkund Ghát to Sirsi, where I arrived on the 6th February, and met the Divisional Officer, Southern Division, Kánara.

134. With him, I went to Sóndá and Manchikeri in the Sirsi-Táluka where I inspected areas proposed for reserves by Mr. Wingate, proceeding on the 20th to Yellápur in the Central Division of Kánara. After inspecting the teak-forests about Ganeshgudi, I moved on to Bomanhalli and Virnóli, where I met Mr. Bell, Assistant Conservator for organization, on the 8th March.

135. From Virnóli I marched to Lónda, and took train for Bombay where I arrived on the 19th.

136. From Bombay, I went to Uran and Alibág, where I met the Divisional Officer, returning to Bombay on the 30th March, where I remained until the end of the month.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

B 623—6 sc

LIST OF STATEMENTS ACCOMPANYING THE FOREST ADMINISTRATION REPORT OF THE CONSERVATOR OF FORESTS, SOUTHERN CIRCLE, FOR 1888-89.

A.	Statement showing the progress of the Forest Demarcation and Settlement work up to 1st April 1889.
Form No. 49	Area of Reserved Forests, 1888-89.
„ 49A.	Area of Protected Forests, 1888-89.
„ 50	Prosecution for breaches of Forest Rules during 1888-89.
„ 51	Area of Forest tracts protected from fire during the dry season of 1889.
„ 52	Area of Plantations, 1887-88.
„ 53	Trees felled by Government agency during the year 1888-89 (selection fellings).
„ 54	Outturn of timber and firewood during 1888-89.
„ 55	Outturn of minor produce, 1888-89.
„ 56	Account of timber and other produce cut or collected by Government agency and brought to sale depôts or sold locally during the year 1888-89.
„ 57	Abstract showing the value of timber and other produce at sale depôts for the year 1888-89.
„ 57A.	Abstract showing the value of dead-stock for the year 1888-89.
„ 58	Summary of revenue and expenditure of the different divisions during the year 1888-89.
„ 59	Account current for the year 1888-89.
„ 60	Revenue received and outstandings on account of revenue during 1888-89.
„ 61	Outstandings and liabilities on account of contractors and disbursers for 1888-89.
„ 62	Financial Results of the year 1888-89.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

A.

Statement showing the progress of Forest Demarcation and Settlement work up to the 1st April 1889.

Name of Collectorate.	Class of Forests.	At the commencement of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.		Areas settled during the year. Under Chapter II of the Forest Act.		Areas settled during the year. Under Chapter XIV of the Act.		Area of Reserved Forests alienated under Section 26.		Area of Protected Forests disforested under Government orders.		At the end of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.		Remarks.
		Sq. miles	Acres.	Sq. miles	Acres.	Sq. miles	Acres.	Sq. miles	Acres.	Sq. miles	Acres.	Sq. miles	Acres.	
Kánara	Reserved ...	214	439	...	...	...	...	...	...	...	...	214	439	
	Protected ...	2,508	321	...	...	...	...	...	...	...	...	2,508	321	
Belgaum	Reserved ...	307	523 7/10	307	523 7/10	...	...	...	...	...	...	...	...	
Bijápur	Reserved ...	155	75 33/40	...	...	...	...	...	...	...	...	155	75 33/40	
	Protected ...	89	409	...	...	...	...	...	...	...	...	89	409	
Kolába	Reserved ...	140	259 3/10	...	...	...	...	...	7/10	...	...	140	258 3/5	
	Protected ...	37	90 19/40	...	...	...	...	...	...	...	9 21/40	37	80 19/20	
Ratnágiri	Reserved ...	20	8 3/10	...	...	...	...	...	47 7/10	...	...	19	600 3/5	
Total ...	Reserved ...	838	26 1/8	307	523 7/10	...	...	...	48 2/5	...	...	530	94 1/40	
	Protected ...	2,635	180 1/40	...	...	...	...	...	...	...	9 21/40	2,635	170 19/20	

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 49.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Area of Reserved Forests, 1888-89.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1888.		Added during the year.	Excluded or transferred to other Heads.	Area on 1st March 1889.		Number and Date of Notification of addition or transfer.	Remarks.
			Acres.	Equivalent in Square Miles.	Acres.	Acres.	Acres.	Equivalent in Square Miles.		
1. Northern Division of Kánara.	Kánara ...	Haliyál and Kárwár ...	298,437	466	...	...	298,437	466		
2. Central Division of Kánara.	Do. ...	Mundgod and Ankola ...	117,359	184	...	...	117,359	184		
3. Southern Division of Kánara.	Do. ...	Sirsi	21,771	34	...	...	21,771	34		
4. Belgaum ...	Belgaum ...	Khánápur, Belgaum, Sampgaon, Gokák, Chikodi and Athni.	314,980½	492	1,599⅕	...	316,579 7/10	495	No. 7425 of 9th November 1889.	
5. Dhárwár ...	Dhárwár ...	Dhárwár, Kalghatgi, Hángal, Bankápur, Kod, Gadag, Ron, Nargund, Hubli and Ránebennur.	109,850 3/40	172	...	...	109,850 3/40	172		
6. Bijápur ...	Bijápur ...	Bádámi, Hungund, Bijápur, Bágevádi, Muddebihál and Indi.	99,275 33/40	155	...	...	99,275 33/40	155		
7. Kolába ...	Kolába ...	Alíbág, Panvel, Pen, Roha, Mahád and Mángaon.	188,151 13/40	294	...	7/10	188,150⅝	294	No. 1111 of 11th February 1889.	
8. Ratnágiri ...	Ratnágiri ...	Dápoli, Khed, Rájápur, Málvan, Chiplún and Sangameshvar.	12,808 3/10	20	...	47 7/10	12,760⅗	20	No. 4395 of 4th July 1889.	
		Total ...	1,162,633	1,817	1,599⅕	48⅖	1,164,183 33/40	1,820		

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 49A.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Area of Protected Forests, 1888-89.

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1888.		Added during the year.	Excluded or transferred to other heads.	Area on 1st March 1889.		Number and Date of Notification of addition or transfer.	Remarks.
			Acres.	Equivalent in Square Miles.	Acres.	Acres.	Acres.	Equivalent in Square Miles.		
1. Northern Division of Kánara.	Kánara ...	Supa	462,944	723	...	...	462,944	723	.....	
2. Central Division of Kánara.	Do. ...	Yellápur, Mundgod, Kumta and Ankola.	568,209	888	...	...	568,209	888	.....	
3. Southern Division of Kánara.	Do. ...	Sirsi, Siddápur, Honávar and Bhatkal.	802,438	1,254	...	...	802,438	1,254	.....	
4. Belgaum ...	Belgaum ...	Belgaum, Chikodi, Gokák and Parasgad.	126,123¾	197	...	111 37/40	126,011 33/40	197	No. 754 of 28th January 1889.	
5. Dhárwár ...	Dhárwár ...	Dhárwár, Kalghatgi, Bankápur, Kod, Hángal, Gadag, Ránebennur, Karajgi and Hubli.	166,659	260	...	...	166,659	260	.....	
6. Bijápur ...	Bijápur ...	Bágalkot, Hungund, Bijápur, Bágevádi and Indi.	364	1	...	....	364	1	.....	
7. Kolába ...	Kolába ...	Alíbág, Panvel, Pen, Roha, Mahád, Mángaon and Nágothna.	56,940 31/40	89	...	11¼	56,926¼	89	No. 571 of 22nd January 1889, and No. 1911 of 11th March 1889.	
		Total ...	2,183,678 1/40	3,412	...	126	2,183,552¼	3,412		

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

ANNUAL FORM No. 50.

Forest Department, Bombay, Southern Circle.

Prosecutions for breaches of Forest Rules during 1888-89.

Forest Division and Civil District.	Cases pending from 1887-88.	New Cases of the year.					Total Cases.	Disposed of during the year.						Cases pending at close of year.
		Injury to Forest by fire.	Unauthorized felling or appropriation of Wood and minor Forest Produce.	Grazing without Permission or in Tracts in which Grazing is prohibited.	Other Offences.	Total new Cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Kánara District.														
Northern Division of Kánara ...	...	...	16	...	...	16	16	11	19	2	2	13	21	3
Central Division of do. ...	...	2	7	...	4	13	13	5	16	3	6	8	22	5
Southern Division of do. ...	...	...	55	...	...	55	55	9	12	9	16	18	28	37
Belgaum District.														
Belgaum	...	1	12	...	...	13	13	11	15	1	5	12	20	1
Dhárwár District.														
Dhárwár	...	...	4	1	1	6	6	5	12	1	8	6	20	...
Bijápur District.														
Bijápur	1	...	13	...	...	13	14	8	18	3	8	11	26	3
Kolába District.														
Kolába	5	1	32	...	20	53	58	45	234	9	24	54	258	4
Ratnágiri District.														
Ratnágiri	...	...	2	2	3	7	7	4	7	3	3	7	10	...
Total ...	6	4	141	3	28	176	182	98	333	31	72	129	405	53

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 51.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Area of Forest Tracts protected from Fire during the Dry Season, 1889, to accompany Report for 1888-89.

Division.	Forest Tracts.	Years in which protection commenced.	Area actually protected up to 15th June 1888.	During the Dry Season of 1889.			Charges.	Remarks.
				Area attempted to be protected.	Failures.	Actually protected.		
			Acres.	Acres.	Acres.	Acres.	Rs. a. p.	
1. Northern Division of Kanara.	Bomanhalli, Kulgi, Bamane, Bhagvati, Tattigeri, Dandeli, Vincholi, Kegdole, Gutti, Amga, Jamga, Pansoli, Virnoli, Kansirda, Poteli, Mandurli, Berampali, Maulinga and Barchi.	1887-88 ...	62,377	153,628	35,607	118,021	679 5 0	
	Barchi, Singatgeri and Bomanhalli Plantations.	.....	504	504	...	504		
	Kumbeli-Gund	1888-89 ...	...	115,000	55,000	60,000	300 2 0	
	Gottegalli and Virgi	.....	...	12,000	400	11,600	93 0 0	
	Sulgeri, Mardi and Kadra Plantations.	1887-88 ...	577	577	...	577	190 0 0	
		.....	63,458	281,709	91,007	190,702	1,362 7 0	
2. Central Division of Kanara.	Kirwatti, Kolikeri, Madnut, Kalsur, Heggapur, Hutkhand, Hosalli, Kanchinhalli, Telgeri, Somanhalli, Gotgali, Lalguli, Nagarkan, Kanigeri and Jogadmane.	1888-89 ...	...	99,061	19,200	79,861	355 13 0	
	Ramanguli, Kattinhakal, Sunksal, Heggar, Hebbul, Kowlali, Ekiguli, Sakalben, Guli, Lakeguli, Kendige, Malani, Kotebhavi, Nelur, Berde, Bogribail, Adlur, Agsur, Achvi, Dongri, Hillur, Gundbala, Moralli, Andle, Balale and Kenkshivpur.	1888-89 ...	...	99,595	71	99,524	201 6 10	
	Arsengeri, Majgeri, Bachanki, Nyasergi, Kundargi, Sanvalli, Bopalgundi, Bapulgutti, Chigutti, Kanvi-Katur, Alalli, Mavkop, Voralgi, Pala, Ingalki, Mudsal, Basapur, Kallikop, Harganhalli, Tattihalli, Balehalli, Gunjavati, Mainhalli, Yerebail, Mulgankop, Mundgod, Pur, Singanhalli, Hulihond, Atangi, Kargankop, Ajihalli, Salgaon, Hirehalli, Katur, Magadi, Hudlekop, Badrapur, Borugadde, Kodambi, Kadabgeri, Gotgundi, Kop, Malgi, Sidapur, Gangsur, Naginkeri, Jengeri, Hoskop, Andebail, Bekode and Jalgeri.	1888-89 ...	...	48,616	825	47,791	442 3 6	
		.....	...	247,272	20,096	227,176	1,009 7 1	
3. Southern Division of Kanara.	Forest Reserves in the Sirsi Range.	1887-88 ...	3,037	20,614	...	20,614	173 8 0	
4. Belgaum ...	Nandi and Sundi	1886-87 ...	1,075	4,800	...	4,800	84 10 6	
	Katgali	1887-88 ...						
	Hajgoli and Kalasgade	1888-89 ...						
	Manturgi	1884-85 ...	...	2,780	...	2,780	56 12 0	
	Savargali, Nagargali and Potoli ...	1886-87 ...	1,991	2,960	355	2,605	134 0 0	
	Satnali	1887-88 ...						
	Posekop, Sulegali, Londe and Gunji.	1888-89 ...	...	2,379	550	1,829	107 11 6	
	Biranholi	1883-84 ...	2,985	7,425	110	7,315	36 5 6	
	Mavnur and Rustumpur	1885-86 ...						
	Daddi	1886-87 ...						
	Katabali	1888-89 ...						
	Konur, Degaon, Tawag and Gokak.	1887-88 ...	...	3,000	...	3,000	14 13 0	
	Deshnur, Suldhal and Hanbarhatti.	1888-89 ...	6,116	...	...	...	.....	
		.....	...	11,877	200	11,677	37 14 0	
		.....	12,167	35,221	1,215	34,006	472 2 6	
5. Dhárwár ...	Dhárwár	1888-89 ...	...	10,441	4,320	6,121	60 12 0	
	Kalghatgi	.....	...	7,185	350	6,835	122 2 6	
	Bankápur	.....	...	3,617	1,280	2,337	76 7 6	
	Kod	.....	...	8,052	...	8,052	.....	
	Gadag	.....	...	6,400	...	6,400	33 0 0	
		.....	...	35,695	5,950	29,745	292 6 0	
6. Kolába... ...	Pen	1888-89 ...	...	4,381	...	4,381	57 8 0	
	Nágothna	.....	...	6,147	...	6,147	44 8 0	
	Roha...	.....	...	6,298	312	5,986	92 0 0	
	Mángaon	.....	...	344	...	344	9 0 0	
	Panvel	.....	...	700	...	700	11 4 0	
		.....	...	17,870	312	17,558	214 4 0	
	Grand Total ...	.....	78,662	638,381	118,580	519,801	3,514 2 10	

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 52.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Area of Plantations, 1888-89.

Divisions.	Name of Plantation.	Area in Acres. On 1st April 1888.	Added during the year.	Excluded during the year.	Area on 31st March 1889.	Receipts. Of the year. Rs. a. p.	Charges. Of the year. Rs. a. p.	Remarks.
	Regular Plantations.							
Northern Division of Kánara.	Kadra	357	...	...	357	1 9 9	289 14 9	
	Mardi	110	...	...	110	.....	85 8 9	
	Sulgeri	110	...	...	110	414 0 0	452 6 0	
	Kárwár	118	5	...	123	8 12 0	.....	
	Bingi...	20	...	...	20	.....	.....	
	Arge	9	11	...	20	.....	810 0 10	
	Barchi	221	...	..	221	.....	147 8 0	
	Singatgeri	83	...	...	83	.....	92 0 6	
	Bomanhalli	200	...	...	200	.....	.....	
Central Division of Kánara.	Devarbail teak plantation .	15	...	...	15	61 14 0	19 12 0	
	Arbail do. ...	5	...	...	5	.....	.....	
Southern Division of Kánara.	Kasarcode	298	...	...	298	10 4 0	2,268 15 11	
Belgaum	Kalasgade	13	...	...	13	0 12 6	.....	
	Linganmat	16	...	...	16	.....	.....	
	Deshnur	150	...	...	150	.....	.....	
Bijápur	Anantpur	90	Gunthás 5	...	90-5	.....	65 0 0	
	Mamdápur	168	...	...	168	.....	.....	
	Shivpur	12	...	...	12	.....	.....	
Kolába	Warsoli	10	...	...	10	38 8 6	.....	
	Ramdharni	50	...	...	50	.....	.....	
	Rájwádi	12	...	...	12	.....	.....	
	Total Regular Plantations ...	2,067	16-5	...	2,083-5	535 12 9	4,231 2 9	
	Cultural Operations.							
Central Division of Kánara.	Sahasarawali	12	...	...	12	.....	.....	
	Yellápur	26	...	...	26	.....	54 7 0	
	Harwáda	1	...	...	1	11 4 0	.....	
Southern Division of Kánara.	Banawasi	27	...	...	27	.....	.....	
	Anegundi	7	...	...	7	.....	.....	
	Kalkatti	2	...	...	2	.....	.....	
	Alalli			Not known.				
Belgaum	3 villages kumri in Belgaum.	21	...	...	21	.....	.....	
	17 do. Khánápur.	90	...	...	90	.....	.....	
	Nagargali	½	...	...	½	.....	39 5 0	
Dhárwár	Holtikota	34	...	...	34	.....	.....	
	Salkinkop	152	...	...	152	140 0 0	.....	
	Gongdikop	28	...	...	28	.....	.....	
	Saptapur	35	...	...	35	52 0 0	.....	
	Kelgeri	21	...	...	21	71 0 0	5 1 0	
	Kalghatgi	399	...	...	399	.....	4 4 3	
	Ichanhalli	86	...	...	86	.....	.....	
	Devikop	29	...	...	29	.....	11 3 3	
Bijápur	Mamdápur	*216	...	...	216	.....	.....	*The area put down last year as 194 acres is owing to a mistake in the divisional return for 1887-88 now rectified.
	Kaládgi	195	...	..	195	.....	.....	
	Jacknur	9	...	...	9	.....	5 0 0	
	Khánápur	...	½	...	½	.....	9 0 0	
	Nágrál	...	½	...	½	.....	5 0 0	
Kolába	Alíbág	5	...	...	5	4 10 6	11 3 0	
	Sattad	81	...	...	81	.....	.....	
Ratnágiri	Dápoli	110	51	42	119	.....	.....	
	Khed...	17	...	...	17	.....	.....	
	Chiplun	66	43	36	73	.....	.....	
	Sangameshvar	122	23	...	145	.....	.....	
	Málvan	21	9	...	30	.....	.....	
	Total Cultural Operations ...	1,812¼	127	78	1,861¼	278 14 6	144 7 6	
	Grand Total ...	3,879-10	143-5	78	3,944-15	814 11 3	4,375 10 3	

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 53.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Trees felled by Government Agency during the year 1888-89.
(Selection Fellings.)

Division.	Trees felled.		Remarks.
	Description.	Number.	
Northern Division of Kánara.	Teakwood	764	
	Blackwood	6	
	Junglewood	25	
	Total ...	795	
Central Division of Kánara.	Teakwood	1,760	
	Blackwood	38	
	Junglewood	603	
	Total ...	2,401	
Southern Division of Kánara.	Sandalwood	320	
Belgaum	Teakwood	132	
Dhárwár	Teakwood	3,672	
	Junglewood	445	
	Sandalwood	243	
	Total ...	4,360	
	Grand Total ...	8,008	

ABSTRACT OF THE CIRCLE.

	Teakwood	6,328
	Blackwood	44
	Junglewood	1,073
	Sandalwood	563
	Total ...	8,008

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle

FORM No. 54.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Outturn of Timber and Firewood during the year 1888-89.

Division.	Description of Materials.	Outturn in Cubic Feet.								Remarks.
		Selection Fellings.	Clearances.	Thinnings.	Total.	Removed by				
						Government Agency.	Purchasers.	Free Grants.	Right-holders.	
Northern Division of Kánara.	Teakwood	141,214	...	...	141,214	140,938	276	...	...	
	Do. pieces	...	316	...	316	316	...	...	...	
	Do. poles	...	15,499	1,056	16,555	16,555	...	...	...	
	Do. round pieces for sleepers	8,397	...	...	8,397	8,397	...	...	...	
	Blackwood	9,849	8	...	9,857	9,497	360	...	...	
	Do. pieces	...	60	...	60	51	9	...	...	
	Do. poles	...	5	...	5	5	...	...	...	
	Sandalwood trees	153	...	...	153	153	...	...	...	
	Janglewood	98,430	20	...	98,450	25,251	51,572	21,627	...	
	Do. pieces	93	386	...	479	479	...	...	...	
	Do. rafters	1,496	...	...	1,496	...	200	1,296	...	
	Do. poles	...	5	...	5	5	...	...	...	
	Do. stakes	...	635	...	635	635	...	...	...	
	Firewood ... Cart-loads.	...	1,659	...	1,659	...	1,659	...	...	
	Do. ... Cubic-feet.	...	655,199	...	655,199	255,199	400,000	...	...	
	Do. ... Head-loads.	...	31,087	...	31,087	518	30,569	...	...	
	Do. ... ... Tons.	...	8,693		8,693	388	8,305	...	...	
	Baini Trees	...	1	...	1	...	1	...	...	
	Karvi ... ... Head-loads.	...	2,480	...	2,480	...	2,480	...	...	
	Savri and Moi trees	...	242	...	242	...	242	...	...	
	Total ...	259,632	716,295	1,056	976,983	458,387	495,673	22,923	...	
Central Division of Kánara.	Teakwood	81,324	15,211	...	96,535	91,418	4,976	141	...	
	Blackwood	1,405	6,312	...	7,717	1,928	5,789	...	...	
	Janglewood	26,632	69,476	...	96,108	23,376	47,670	25,062	...	
	Teak poles	...	...	6,473	6,473	6,473	...	..	...	
	Janglewood poles	...	...	1,934	1,934	184	1,022	728	...	
	Teak round pieces	8,182	...	...	8,182	8,182	...	...	..	
	Do. adzed sleepers	—	...	90	90	90	...	...	...	
	Do. pieces	...	7	...	7	7	...	...	...	
	Blackwood pieces	...	4	...	4	4	...	...	...	
	Junglewood do.	...	7	555	562	7	555	...	...	
	Jiráitwood do.	...	...	1,358	1,358	8	1,350	...	...	
	Do. stacks	...	...	44	44	44	...	...	...	
	Teak plants	...	...	100	100	100	...	...	...	
	Thinnings from teak trees Stacks ...	...	...	13	13	13	...	...	...	
	Sandalwood ... Khandis.	...	16	...	16	16	...	...	...	
	Do. pieces	..	...	1,411	1,411	1,410	1	...	...	
	Do. roots	...	...	757	757	757	...	...	...	
	Do. trees	...	36	...	36	36	...	...	...	
	Firewood ... Cubic feet.	...	844,594	...	844,594	...	844,594	...	...	
	Do. ... Cart-loads.	...	...	1,741	1,741	...	1,572	169	...	
	Do. ... Head-loads.	...	...	71,403	71,403	...	69,828	1,575	...	
	Do. ... Stacks.	...	...	539	539	539	...	...	...	
	Charcoal ... Maunds.	...	367	...	367	...	367	...	...	
	Total ...	117,543	936,030	86,418	1,139,991	134,592	977,724	27,675	—	
Southern Division of Kánara.	Sandalwood ... Khandis.	58	...	...	58	58	...	...	...	
	Teakwood	12,827	..	...	12,827	10,990	1,837	...	...	
	Blackwood	672	...	...	672	551	121	...	...	
	Junglewood	34,152	88,885	...	123,037	10,152	88,885	24,000	...	
	Do. poles	...	...	390	390	...	275	115	...	
	Teak sleeper pieces	...	740	...	740	740	...	...	...	
	Firewood ... Cart-loads.	...	...	3,229	3,229	...	3,229	...	...	
	Do. ... Head-loads.	...	...	53,934	53,934	...	53,934	...	...	
	Do. ... Maunds.	...	...	2,276	2,276	...	2,276	...	...	
	Charcoal ... ... ,,	...	77	...	77	...	73	4	...	
	Total ...	47,709	89,702	59,829	197,240	22,491	150,630	24,119	...	

FORM No. 54—*continued.*

Division.	Description of Materials.	Outturn in Cubic Feet.				Removed by				Remarks.
		Selection Fellings.	Clearances.	Thinnings.	Total.	Government Agency.	Purchasers	Free Grants.	Right-holders.	
Belgaum.	Teak trees ... ... No.	1,045	...	...	1,045	1,045	...	...	...	
	Do. poles from branches... ...	310	...	...	310	310	...	...	...	
	Teak poles	132	4,702	...	4,834	3,801	1,033	...	...	
	Blackwood logs . Cubic-feet.	...	350	...	350	...	350	...	..	
	Do. poles ,,	...	63	...	63	...	63	...	...	
	Janglewood logs ,,	...	1,040	...	1,040	942	98	...	...	
	Do. poles .. No.	...	9,319	816	10,135	8,177	1,520	438	...	
	Teak pieces	937	...	...	937	937	...	...	...	
	Teak round pieces	117	...	...	117	117	...	...	...	
	Do. slabs	75	...	...	75	75	...	...	...	
	Sandalwood pieces	...	24	1	25	...	25	...	...	
	Firewood stacks	...	13,589	...	13,589	13,589	...	...	...	There are no right-holders except in regard to free grazing and rab, the quantity and value of which cannot be assessed.
	Do. ... Cart-loads.	...	1,374	1,946	3,320	1,374	1,946	...	...	
	Do. ... Head-loads.	...	2,545	125,083	127,628	...	127,628	...	...	
	Do. ...Bullock-loads.	...	...	536	536	...	536	...	...	
	Do. ... Cubic feet.	...	1,657,094	...	1,657,094	1,657,094	...	...	...	
	Lighting fuel... ,,	...	131,740	...	131,740	131,740	...	...	...	
	Babul trees ... ... No.	...	...	212	212	...	212	...	...	
	Karvi ... Cart-loads.	..	...	173	173	...	173	...	...	
	Toddy trees ... ... No.	...	...	18	18	...	18	...	...	
	Thorns ... Cart-loads.	...	...	1,782	1,782	...	1,782	...	...	
	Do. ... Head-loads.	...	...	54	54	...	54	...	-	
	Charcoal ... Maunds.	...	...	14,326	14,326	...	14,326	...	...	
	Total ...	2,616	1,821,840	144,947	1,969,403	1,819,201	149,764	438	...	
Dhárwár.	Teak rafters	3,555	3,772	...	7,327	7,185	142	...	...	
	Matti do.	445	157	...	602	601	1	...	...	
	Blackwood do.	...	21	...	21	21	...	...	...	
	Jiráitiwood	155	18,954	...	19,109	18,778	331	...	...	
	Firewood ... Stacks.	...	...	8,764	8,764	...	8,764	...	...	
	Do. ... Cart-loads.	...	...	377	377	...	377	...	...	
	Do. ... Head-loads.	...	...	21,838	21,838	...	21,838	...	..	
	Do. . Animal-loads.	...	...	1,742	1,742	...	1,742	...	...	
	Total ...	4,155	22,904	32,721	59,780	26,585	33,195	...	...	
Bijápur.	Bábul trees	...	...	74	74	...	74	...	...	
	Maswal rafters	...	...	7,265	7,265	...	7,265	...	...	
	Firewood	...	...	155,611	155,611	...	155,611	...	...	
	Total ..	...	...	162,950	162,950	...	162,950	...	...	
Kolába.	Teak trees ... ..., No.	...	116,467	...	116,467	15,562	100,905	...	...	
	Firewood ... Khandis.	..	23,000	...	23,000	...	23,000	...	...	
	Total ...	...	139,467	...	139,467	15,562	123,905	...	...	
Ratnágiri.	Teak poles, &c. ... No.	...	...	24,592	24,592	23,937	655	...	...	
	Firewood ... Khandis.	...	...	550	550	473	77	...	...	
	Total ...	...	...	25,142	25,142	24,410	732	...	...	

Conservator's Office, Southern Circle :
Dated Belgaum, 16th November 1889.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 55.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Outturn of Minor Forest Produce.

Division.	Description of Produce.	Produce removed or utilized.									
		By Government Agency.		By Purchasers.		By Free-grants.		By Right-holders.		Total.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.
Northern Division of Kánara.	Bambus	..	....	3,450,471	39,380 9 8	7,950	35 8 0	..	..	3,458,421	39,416 1 8
	Charcoal .. Sacks.	..	....	215	13 7 0	..	....	..	..	215	13 7 0
	Bambu Posts	..	....	300	1 14 0	..	....	..	..	300	1 14 0
	Hirda .. Khandis.	1,901	18,779 15 9	..	....	..	....	..	..	1,901	18,779 15 9
	Shigekai .. ,,	..	....	..	978 0 0	..	....	..	..	..	978 0 0
	Honey .. ,,	..	....	..	856 2 0	..	....	..	..	..	856 2 0
	Pepper .. ,,	..	....	..	16 0 0	..	....	..	..	..	16 0 0
	Cinnamon .. ,,	..	....	..	267 10 9	..	....	..	..	..	267 10 9
	Nux Vomica .. ,,	..	....	..	16 0 0	..	....	..	..	..	16 0 0
	Wild Turmeric .. ,,	..	....	..	5 0 0	..	....	..	..	..	5 0 0
	Fruit ,,	..	....	..	7 2 0	..	....	..	..	..	7 2 0
	Fees on Bambus from Medars	..	....	..	26 4 0	..	....	..	..	..	26 4 0
	Stones .. Cubic-feet	..	....	12,050	18 13 3	..	....	..	..	12,050	18 13 3
	Earth .. ,,	..	....	7,350	4 9 6	..	....	..	..	7,350	4 9 6
	Do. .. Cart-loads.	..	....	4	0 4 0	..	....	..	..	4	0 4 0
	Tapping fees on Baini trees	..	....	887	55 7 0	..	....	..	..	887	55 7 0
	Canes .. Head-loads.	..	....	72	18 0 0	..	....	..	..	72	18 0 0
	Grazing fees	..	....	..	6,837 0 6	..	....	..	..	..	6,837 0 6
	Total ..	..	18,779 15 9	..	48,502 3 8	..	35 8 0	..	..	..	67,317 11 5
Central Division of Kánara.	Solid Male Bambus	400	20 0 0	..	....	..	....	..	..	400	20 0 0
	Hirda .. Khandis.	366	3,893 4 9	..	....	..	....	..	..	366	3,893 4 9
	Shigekai .. ,,	3	70 9 2	..	....	..	....	..	..	3	70 9 2
	Grass .. Bundles.	16,585	61 12 3	2,000	1 0 0	..	....	..	..	18,585	62 12 3
	Do.	..	....	..	35 0 0	..	....	..	..	..	35 0 0
	Bambus	..	....	342,240	7,221 6 5	990	9 14 5	..	..	343,230	7,231 4 10
	Sibs	..	....	698,425	6,421 7 0	900	2 4 0	..	..	699,325	6,423 11 0
	Reeds	..	....	10,500	15 10 0	..	....	..	..	10,500	15 10 0
	Bambus on contract	..	....	..	76 8 0	..	....	..	..	..	76 8 0
	Tapping fees on Baini trees	..	....	390	24 6 0	..	....	..	..	390	24 6 0
	Grazing fees	..	....	..	6,676 15 1	..	....	..	..	..	6,676 15 1
	Quarry fees	..	....	..	1 0 0	..	....	..	..	..	1 0 0
	Earth .. Cart-loads.	..	....	65	4 1 0	..	....	..	..	65	4 1 0
	Canes .. Head-loads.	..	....	106	26 12 0	..	....	..	..	106	26 12 0
	Honey	..	....	..	1,660 0 0	..	....	..	..	..	1,660 0 0
	Ramfal & Rampatri. Head-loads.	..	....	..	2,497 8 0	..	....	..	..	..	2,497 8 0
	Pepper .. ,,	..	....	..	398 5 4	..	....	..	..	..	398 5 4
	Cinnamon .. ,,	..	....	..	463 5 4	..	....	..	..	..	463 5 4
	Kaju seeds ..	..	....	..	11 4 0	..	....	..	..	..	11 4 0
	Nux Vomica	..	....	..	25 0 0	..	....	..	..	..	25 0 0
	Bádar betté	..	....	..	35 0 0	..	....	..	..	..	35 0 0
	Catechu	..	....	..	2,259 0 0	..	....	..	..	..	2,259 0 0
	Total ..	..	4,045 10 2	..	27,853 8 2	..	12 2 5	..	..	..	31,911 4 9
Southern Division of Kánara.	Hirda .. Khandis.	2,131	21,846 1 9	..	....	..	....	..	..	2,131	21,846 1 9
	Shigekai	5	79 0 10	..	....	..	....	..	..	5	79 0 10
	Bambus (large and Medár)	..	....	50,765	555 14 0	500	5 0 0	..	..	51,265	560 14 0
	Do. (thin)	..	....	75,350	203 6 0	650	1 10 0	..	..	76,000	205 0 0
	Grazing fees	..	....	..	8,649 12 7	..	....	..	..	..	8,649 12 7
	Honey	..	....	..	1,430 9 4	..	....	..	..	..	1,430 9 4
	Palm trees	..	....	117	117 0 0	..	....	..	..	117	117 0 0
	Thorns .. Cart-loads.	..	....	24	4 4 0	..	....	..	..	24	4 4 0
	Canes .. Head-loads.	..	....	353	88 4 0	4	1 0 0	..	..	357	89 4 0
	Rampatri and Cinnamon	..	....	..	722 0 0	..	....	..	..	..	722 0 0
	Tapping fees on Baini trees	..	....	346	21 10 0	..	....	..	..	346	21 10 0
	Wild Pepper	..	....	..	36 0 0	..	....	..	..	..	36 0 0
	Aleksistu	..	....	..	15 9 5	..	....	..	..	..	15 9 5
	Shige bark .. Maunds.	..	....	989	247 6 0	..	....	..	..	989	247 6 0
	Catechu	..	....	..	4,690 0 0	..	....	..	..	..	4,690 0 0
	Hadchari leaves .. Head-loads.	..	....	29	1 10 0	..	....	..	..	29	1 10 0
	Heart of palm	..	....	112	0 10 0	..	....	..	..	112	0 10 0
	Cocoanuts	..	....	..	0 4 0	..	....	..	..	..	0 4 0
	Total ..	..	21,925 2 7	..	16,784 3 5	..	7 10 0	..	..	..	38,717 0 0
Belgaum.	Hirdas .. Khandis.	6,608	56,723 8 0	..	....	..	....	..	..	6,608	56,723 8 0
	Canes .. Head-loads.	..	....	241	15 1 0	..	....	..	..	241	15 1 0
	Bambus	1,500	62 6 0	56,753	1,700 15 6	..	....	..	..	58,253	1,763 5 6
	Do. (Medár)	..	....	64,925	1,298 8 0	..	....	..	..	64,925	1,298 8 0
	Sibs	..	....	376,046	3,625 8 0	800	8 0 0	..	..	376,846	3,633 8 0
	Chives	..	....	62,875	314 6 0	..	....	..	..	62,875	314 6 0
	Grazing fees	..	....	..	15,612 15 3	..	....	..	..	..	15,612 15 3
	Grass	..	....	..	3,882 14 9	..	....	..	..	..	3,882 14 9
	Sale of Toddy trees	..	....	18	9 0 0	..	....	..	..	18	9 0 0
	Tapping fees	..	....	115	7 3 0	..	....	..	..	115	7 3 0
	Stones .. Cubic feet.	..	....	202,837	681 3 10	..	....	..	..	202,837	681 3 10
	Do. .. Cart-loads.	..	....	10,031	629 14 0	..	....	..	..	10,031	629 14 0
	Do. .. Donkey-loads.	..	....	5,232	82 9 0	..	....	..	..	5,232	82 9 0
	Shigekai .. Khandis.	..	....	760	2,914 3 6	..	....	..	..	760	2,914 3 6
	Honey .. Maunds.	..	....	251	550 0 0	..	....	..	..	251	550 0 0
	Gum .. ,,	..	....	362	569 9 5	..	....	..	..	362	569 9 5
	Coffee .. Seers.	..	....	6	0 12 6	..	....	..	..	6	0 12 6
	Tamarind fruits .. ,,	..	....	71	28 0 7	..	....	..	..	71	28 0 7
	Cinnamon .. ,,	..	....	240	254 1 0	..	....	..	..	240	254 1 0
	Earth .. Donkey-loads.	..	....	1,352	21 2 0	..	....	..	..	1,352	21 2 0
	Do. .. Baskets.	..	....	41	0 10 3	..	....	..	..	41	0 10 3
	Sandurgi leaves .. Head-loads.	..	....	310	14 8 6	..	....	..	..	310	14 8 6
	Castor-oil seeds Seers.	..	....	12	3 3 0	..	....	..	..	12	3 3 0
	Tarwad bark Bullock-loads	..	....	137	12 13 6	..	....	..	..	137	12 13 6
	Do. .. Cart-loads	..	....	3	3 0 0	..	....	..	..	3	3 0 0
	Do. .. Head-loads.	..	....	806	71 9 3	..	....	..	..	806	71 9 3
	Total ..	..	56,785 14 0	...	32,303 11 10	..	8 0 0	..	..	...	89,097 9 10

FORM No. 55—*continued.*

Division.	Description of Produce.	PRODUCE REMOVED OR UTILIZED.									
		By Government Agency.		By Purchasers.		By Free Grants.		By Right-holders.		Total.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.
Dhárwár	Grass .. .. Pullies.	1,000	1 4 0	11,740	125 0 5	..	....	..	..	12,740	126 4 5
	Do. .. .. Madi.	..	....	..	17 8 0	..	....	..	..	..	17 8 0
	Do. .. .. Thatching.	..	....	..	38 1 3	..	....	..	..	..	38 1 3
	Do. .. .. Mat, Cart-loads.	..	....	10	1 4 0	..	....	..	..	10	1 4 0
	Do. .. From kurans.	..	....	1,394	6 0	..	....	..	..	1,394	6 0
	Thorns .. .. Loads.	..	....	1,780	150 8 6	..	....	..	..	1,780	150 8 6
	Stones .. .. Do.	..	....	1,051	140 4 0	..	....	..	..	1,051	140 4 0
	Earth .. .. Do.	..	....	126	5 10 0	..	....	..	..	126	5 10 0
	Manure	..	....	..	3 0 0	..	....	..	..	..	3 0 0
	Royalty for tapping toddy trees.	..	....	742	46 6 0	..	....	..	..	742	46 6 0
	Do. on toddy-tree branches Loads.	..	....	637	62 13 9	..	....	..	..	637	62 13 9
	Do. on Bábul pods	..	....	..	105 0 0	..	....	..	..	..	105 0 0
	Do. on Mango fruits ..	..	....	..	28 11 0	..	....	..	..	..	28 11 6
	Do. on Tamarind do. ..	..	....	..	18 10 7	..	....	..	..	..	18 10 7
	Do. on Karanj do. ..	..	....	..	109 0 0	..	....	..	..	..	109 0 0
	Do. on Jujub do. ..	..	....	..	0 10 0	..	....	..	..	..	0 10 0
	Do. on Marking nuts ..	..	....	..	28 4 0	..	....	..	..	..	28 4 0
	Do. on Honey	..	....	..	167 11 0	..	....	..	..	..	167 11 0
	Gum	..	....	..	13 8 0	..	....	..	..	..	13 8 0
	Karibantan .. .. Balli.	..	....	9	0 9 0	..	....	..	..	9	0 9 0
	Total ..	..	1 4 0	..	2,489 5 6	..	....	..	..	..	2,490 9 6
Bijápur.	Earth, stones, &c.	..	....	..	10,683 4 7	..	....	..	..	..	10,683 4 7
Kolába.	Hirda, Shigekai, Apta and Temburni leaves	..	....	..	700 0 0	..	....	..	..	..	700 0 0
Ratnágiri.	Hirda .. .. Maunds.	34	38 12 0	..	....	..	....	..	..	34	38 12 0

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MACGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 56.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Account of Timber and other Produce cut or collected by Government Agency and brought to Sale Depôts or sold locally during the year 1888-89.

Particulars.	Number or Quantity.	Cubic Feet.	TOTAL OF EACH HEAD. Number or Quantity.	TOTAL OF EACH HEAD. Cubic Feet.
TIMBER.				
Balance at commencement of the year.				
Northern Division of Kánara. — Teakwood	4,474	127,257		
Do. pieces	3,856	....		
Do. sleepers	5,527	....		
Do. slabs	7,938	....		
Blackwood	27	588		
Do. pieces	1	....		
Junglewood	943	22,172		
			22,266	150,017
Central Division of Kánara. — Teak round pieces	5,683	....		
Do. sleepers	3,163	....		
Do. slabs	25,053	....		
Do. logs	2,494	55,447		
Teakwood	..	19,603		
Do. poles	59	....		
Do. round board	1	....		
Blackwood	..	10		
Do. logs	46	680		
Junglewood	..	12,865		
Do. logs	854	15,297		
Jiráitwood stacks	12	....		
Sitting boards	72	....		
Miscellaneous pieces	..	43		
			35,437	108,745
Southern Division of Kánara. — Teak	434	9,664		
Do. poles	1,059	4,347		
Do. round pieces	530	....		
Do. sleepers	599	....		
Do. slabs	61,694	....		
Blackwood	4	92		
Junglewood	890	17,438		
Do. poles	75	232		
			65,285	31,773
Belgaum Division. — Teak trees	245	2,750		
Do. sleepers	1,492	....		
Do. slabs	1,165	....		
Poles from branches	1,793	....		
Junglewood poles and logs	2,348	....		
			7,043	2,750
Dhárwár Division. — Teak rafters	6,714	....		
Matti do.	793	....		
Jiráitwood	22,277	....		
Slabs	125	....		
Miscellaneous rafters	120	....		
			30,029	....
Kolába Division. — Teak poles and beams	631	....		
Miscellaneous	126	....		
			757	....
Ratnágiri Division. — Teak pieces	267	....	267	....
Total Balance	..	..	161,084	288,285
Received from the Forests in Depôts.				
Teak trees	1,045	13,475		
Teakwood	7,107	151,928		
Do. round pieces	17,208	....		
Do. do.	..	74		
Do. poles	26,870	2,833		
Poles from branches	310	1,533		
Teak logs	2,022	44,473		
Do. plants	100	....		
Do. top and end pieces	937	1,240		
Do. rafters	7,707	....		
Do. sotas and miscellaneous pieces	28,937	....		
Do. adzed sleepers	90	....		
Blackwood	723	11,926		
Do. pieces	4	....		
Do. poles	5	....		
Junglewood	2,896	54,435		
Do. pieces	7	....		
Do. do.	..	7		
Do. poles	8,177	5,642		
Stacks of thinnings from teak trees.	13	....		
Karimutal pole	1	15		
Matti poles	183	....		
Do. rafters	588	....		
Sissum do.	21	....		
Jiráitwood stacks	44	....		
Do. pieces	19,911	....		
			119,906	287,581

Particulars.	Number or Quantity.	Cubic Feet.	TOTAL OF EACH HEAD. Number or Quantity.	TOTAL OF EACH HEAD. Cubic Feet.
Removed by purchasers from Depôts.				
Teakwood	10,352	221,933		
Teak trees	1,210	15,146		
Do. round pieces	875	....		
Do. sleepers	27,891	....		
Do. slabs	43,186	....		
Do. poles	28,950	5,153		
Do. adzed sleepers	90	....		
Do. planks	100	....		
Do. pieces	7	....		
Do. round pieces.	..	74		
Teak	..	21,075		
Do. poles from branches	2,103	2,453		
Do. top and end pieces	937	1,240		
Do. rafters	9,779	....		
Do. sotas and miscellaneous poles, &c.	21,743	....		
Stacks of thinnings from teak trees.	13	9		
Blackwood	637	1,876		
Do.	..	9		
Do. pieces	5	....		
Do. poles	5	....		
Junglewood	5,377	67,821		
Do.	..	2,370		
Do. poles	6,922	6,627		
Do. pieces	7	....		
Matti poles	183	....		
Do. rafters	938	....		
Jiráitwood pieces	25,300	....		
Do. stacks	56	....		
Blackwood rafters	19	....		
Karimutal pole	1	15		
Miscellaneous pieces	2	....		
			186,688	345,802
Sold locally.				
Teakwood	..	55		
Do. poles and pieces	23,311	72,810		
Do. sleeper pieces	500	....		
Branches of teak trees felled for sleepers	300	....		
Sawn timber Cart-loads,	1	....		
Blackwood pieces	6	67		
Junglewood poles	73	70		
Do. pieces	128	479		
Do. stacks	635	....		
			24,954	73,481
Converted in Depôts.				
Teak trees	65	854		
Do. round pieces	15,098	....		
Teakwood	..	1,881		
			15,163	2,735
Lost or written off as useless.				
Matti rafters	10	....	10	....
Used by the Department.				
Teakwood	..	167		
Do. poles	30	30		
Do. slabs	201	....		
Blackwood	1	27		
Junglewood	..	917		
Miscellaneous pieces	..	7		
			232	1,148
Transferred to other Sale Depôts.				
Teak round pieces	2,667	....		
Do. sleepers	2,299	..		
Do. slabs	3,246	....		
Do. logs	2,205	47,455		
Junglewood logs	345	8,359		
Blackwood do.	3	50		
Teak rafters	7,608	....		
Matti do.	601	....		
Blackwood do.	21	....		
Jiráiti pieces	18,355	....		
			37,350	55,864
Balance at close of the year.				
Northern Division of Kánara. — Teakwood	4,231	119,635		
Do. round pieces.	4,932	....		
Do. sleepers	3,021	....		
Do. slabs	14,716	....		
Blackwood	31	638		
Junglewood	416	8,641		
			27,347	128,914

FORM No. 56—*continued.*

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
TIMBER—*continued.*				
Received from the Forests and sold locally.				
Teakwood	..	55		
Do. poles and pieces	25,731	76,328		
Do. sleeper pieces	500	....		
Branches of teak trees felled for sleepers	300	....		
Sundries .. .. Cart-loads	1	....		
Jdlawud pieces	6	67		
Junglewood poles	73	70		
Do. pieces	128	479		
Do. stacks	635	....		
			27,374	78,999
Received by conversion in Depôts.				
Teak sleepers	23,018	....		
Do. poles	20,997	....		
Do. round pieces, 9 feet	14	90		
Do. do. 6 feet	103	520		
Blackwood	..	14		
Do. poles	..	2,191		
Teakwood	..	25,188		
			44,132	28,003
Received by transfer from Sale Depôts.				
Teak round pieces	2,667	....		
Do. sleepers	2,299	....		
Do. poles	3,246	....		
Do. logs	2,205	47,455		
Junglewood logs	345	8,359		
Blackwood do.	3	50		
Teak rafters	7,608	....		
Matti do.	601	....		
Blackwood rafters	21	....		
Jiráiti pieces	18,355	....		
			37,350	55,864
Total ..	..	....	889,846	738,732

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
TIMBER—*continued.*				
Balance at close of the year—contd.				
Central Division of Kánara. — Teakwood	..	21,666		
Blackwood	..	15		
Junglewood	..	11,570		
Miscellaneous pieces ..	..	34		
Teak round pieces ..	5,679	....		
Do. sleepers	2,283	....		
Do. slabs	7,916	....		
Do. poles	412	....		
Do. logs	1,537	39,236		
Round teak board ..	1	....		
Blackwood logs ..	103	1,837		
Junglewood logs ..	1,338	24,903		
Sitting boards	72	....		
			19,571	99,267
Southern Division of Kánara. — Teak	411	7,965		
Blackwood	28	4		
Junglewood	800	13,817		
Teak poles	175	1,93		
Junglewood poles ..	17	54		
Sleepers	604	....		
Slabs	48,888	....		
Round teak sleeper pieces	310	....		
			51,233	23,259
Belgaum Division. — Teak trees	15	225		
Do. poles	1	4		
Do. slabs	35	....		
Junglewood poles ..	1,313	5.3		
			1,364	762
Dhárwár Division. — Teak rafters	4,979	....		
Matti do.	410	....		
Blackwood rafters ..	2	....		
Jiráiti pieces ..	16,263	....		
Miscellaneous rafters.	142	....		
			21,796	....
Kolába Division. — Teak poles and pieces.	1,666	7,500		
Miscellaneous	211			
			1,877	7,500
Ratnágiri Division. — Teak poles of different classes	1,771	....		
Miscellaneous pieces ..	690	....		
			2,461	....
Total Balances ..	..	....	12,440	239,702
Total ..	..	....	889,846	738,732

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
FIREWOOD.				
Balance at commencement of the year.				
Northern Division of Kánara. — Firewood .. Tons.	285	....		
Charcoal .. Muras.	23	....		
Central Division of Kánara. — Firewood .. Stacks	38	....	308	....
			38	....
Belgaum Division. — Firewood .. Stacks.	11,003	....		
Do.	..	446,675		
			11,003	446,675
Dhárwár Division. — Firewood .. Stacks.	2,269	....		
			2,269	....
Total Balance ..	..	....	13,618	446,675
Received during the year.				
Firewood .. .. .. Tons.	388	....		
Do.	..	255,199		
Do. .. .. Stacks.	25,560	....		
Do. .. .. Head-loads.	3,135	....		
Do. .. .. Cart-loads.	1,371	....		
Do. .. .. Khandis	473	....		
Lighting wood	..	1,31,740		
Fuel	..	1,657,094		
			30,927	2,044,033
Total ..	..	....	44,545	2,490,708

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
FIREWOOD.				
Removed by purchasers.				
Firewood .. .. .. Tons.	285	....		
Do.	..	255,199		
Do. .. .. Stacks	26,534	....		
Do. .. .. Head-loads.	3,135	....		
Do. .. .. Cart-loads.	1,371	....		
Do. .. .. Khandis.	473	....		
Lighting wood	..	131,740		
Fuel	..	2,167,769		
			31,798	2,490,708
Lost or written off as useless.				
Firewood stacks	125	....		
			125	....
Balance at close of the year.				
Northern Division of Kánara. — Firewood .. Tons	388	....		
Charcoal .. Muras	23	....		
			411	....
Central Division of Kánara. — Firewood .. Stacks	358	....		
			358	....
Belgaum Division. — Firewood .. Stacks	7,036	....		
			7,036	....
Dhárwár Division. — Firewood .. Stacks	4,817	....		
			4,817	....
Total Balance ..	..	....	12,622	....
Total ..	..	....	44,545	2,490,708

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
BA'MBUS.				
Balance at commencement of the year	..	....		
Received during the year.				
Solid male	400	....		
Large	500	....		
Small	2,500	....		
			3,400	....
Total ..	..	....	3,400	....

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
BA'MBUS.				
Removed by purchasers.				
Solid male	400	....		
Large	500	....		
Small	1,000	....		
			1,900	....
Balance at close of the year.				
Belgaum Division. — Small	1,500	....		
			1,500	....
Total ..	..	....	3,400	....

FORM No. 56—*concluded.*

Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.	Particulars.	Number or Quantity.	Cubic Feet.	Total of each Head. Number or Quantity.	Total of each Head. Cubic Feet.
		K. m. lbs.			SANDALWOOD.		K. m. lbs.		K. m. lbs.
Balance at commencement of the year.				K. m. lbs.	*Removed by purchasers.*				
Southern Division of Kánara. Billets	24	11 6 21			Trees	36	....		
Dhárwár Division. Roots	25	....			Billets	1,202	21 9 14		
Total Balance ..			49	11 6 21	Pieces	1,410	....		
					Roots	782	....		
Received from the Forests in Depôts					Sandalwood	24	42 17 11		
Trees	189	....						3,454	64 6 25
Billets	1,202	21 9 14			*Sold locally.*				
Pieces	1,410	....			Pieces	36	....		
Roots	1,197	....						36	....
Chips and sawdust	..	3 1 3			*Balance at close of the year.*				
Sandalwood	..	73 1 1			Northern Division of Kánara. Trees	153	....		
			3,998	97 11 18				153	....
Received from the Forests and sold locally.					Central Division of Kánara. Trees	..	4 10 14		
Pieces	36	....						....	4 10 14
			36	....	Southern Division of Kánara. Trees	..	36 13 25		
								....	36 13 25
					Dhárwár Division. Roots	440	....		
					Chips and sawdust ..	..	3 1 3		
								440	3 1 3
					Total Balance ..	..	....	593	44 11 14
Total ..	..	....	4,083	108 18 11	Total ..	..	....	4,083	108 18 11
					GRASS AND OTHER MINOR PRODUCE.				
Balance at commencement of the year.					*Removed by purchasers.*				
Northern Division of Kánara. Hirda .. Baskets.	2,017	....			Hirda .. .. .. Baskets.	11,146	....		
			2,017	....	Do. .. .. .. Khandis.	..	8,840 4 7		
Central Division of Kánara. Hirda .. Khandis.	..	135 10 14			Shigekai .. .. .. ,,	..	7 12 7		
Shigekai .. ,,	..	5 18 21			Grass .. .. .. Bundles.	17,585	....		
Grass .. Bundles.	165,518	....						28,731	8,847 16 14
			165,518	141 9 7	*Used by the Department.*				
Southern Division of Kánara. Hirda .. Khandis.	..	355 14 0			Grass .. .. .. Bundles.	51,025	....		
			....	355 14 0				51,025	....
Belgaum .. Hirda .. Khandis.	..	104 0 0			*Balance at close of the year.*				
			....	104 0 0	Northern Division of Kánara. Hirda .. Baskets.	12,319	....		
Dhárwár .. Grass .. Bundles.	1,000	....						12,319	....
			1,000	....	Central Division of Kánara. Hirda .. Khandis.	..	93 2 15		
					Shigekai . ,,	..	3 8 14		
					Grass .. Bundles.	147,444	....		
Total Balance ..	..	....	168,535	601 3 7				147,444	96 11 1
Received during the year.					Southern Division of Kánara. Hirda .. Khandis.	..	726 18 16		
								....	726 18 16
Hirda .. .. .. Baskets.	21,489½	....			Belgaum .. Hirda .. Khandis.	..	45 19 21		
								....	45 19 21
Do. .. .. .. Khandis	..	9,111 0 17			Dhárwár .. Hirda .. Baskets.	41½	....		
Shigekai .. .. ,,	..	5 2 0						41½	....
Grass .. .. .. Bundles.	49,536	....							
			71,025½	9,116 2 17	Total Balance ..	..	....	159,804½	869 9 10
Total ..	..	....	239,560½	9,717 5 24	Total ..	..	....	239,560½	9,717 5 24

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

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FORM No. 57.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Abstract showing the value of Timber and other Produce at Sale Depôts for the year 1888-89.

Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in Value.		Remarks.
	No.	Cubic feet.	Value.	No.	Cubic feet.	Value.	In favour of the year.	Against the year.	
			TIMBER.						
Northern Division of Kánara.			Rs.			Rs.	Rs.	Rs.	
Teakwood	4,474	127,257	1,96,500	4,231	119,635	1,76,476	.....	20,024	
Blackwood...	27	588	552	31	638	756	204	.....	
Junglewood	943	22,172	20,964	416	8,641	8,667	.....	12,297	
Teak round pieces ...	3,356	...	10,068	4,932	...	9,864	.....	204	
Do. sleepers	5,527	...	11,054	3,021	...	6,042	.....	5,012	
Do. slabs...	7,938	...	800	14,716	...	1,470	670	.....	
Blackwood pieces... ...	1	...	2	...	...	.....	.....	2	
Total ...	...	...	2,39,940			2,03,275	874	37,539	
Central Division of Kánara.									
Logs	3,394	71,424	84,360	2,978	65,976	77,852	.....	6,508	
Teak round pieces ...	5,683	...	28,415	5,679	...	28,395	.....	20	
Do. sleepers	3,163	...	7,580	2,283	...	4,566	.....	3,014	
Do. slabs	23,053	...	2,305	7,946	...	318	.....	1,987	
Do. poles	59	...	177	412	...	765	588	.....	
Sitting boards	72	...	10	72	...	10	.....	.....	
Miscellaneous scantlings...	...	32,321	64,642	...	33,291	66,582	1,940	.....	
Round teak board ...	1	...	0-5-0	1	...	0-5-0	.....	.....	
Jiraitwood stacks... ...	12	...	24	...	...	.....	.....	24	
Total ...	...	...	1,87,513-5-0			1,78,488-5-0	2,528	11,553	
Southern Division of Kánara.									
Teakwood	434	9,664	13,723	411	7,965	10,833	.....	2,890	
Blackwood...	4	92	123	28	430	400	277	.....	
Junglewood	890	17,438	15,345	800	13,817	11,053	.....	4,292	
Teak poles	1,059	4,347	1,845	175	993	397	.....	1,448	
Junglewood poles	75	232	46	17	54	10	.....	36	
Teak round pieces ...	530	...	.....	310	...	.....	.....	.....	
Do. sleepers	599	...	1,198	604	...	1,208	10	.....	
Do. slabs	61,694	...	3,856	48,888	...	1,956	.....	1,900	
Total ...	...	...	36,136			25,857	287	10,566	
Belgaum Division.									
Teak trees	245	2,750	1,700	15	225	135	.....	1,565	
Do. sleepers	1,492	...	3,000	...	...	.....	.....	3,000	
Do. slabs	1,165	...	110	35	...	5-4-0	.....	104-12-0	
Do. poles from branches.	1,793	...	1,500	...	...	.....	.....	1,500	
Do. poles	...	...	.....	1	4	4	.....	.....	
Junglewood logs	450	5,850	2,500	...	...	.....	.....	2,500	
Do. poles	1,898	1,341	220	1,313	533	288-7-0	68-7-0	.....	
Total ...	...	...	9,030			432-11-0	72-7-0	8,669-12-0	
Dhárwár Division.									
Teak rafters	6,714			4,979					
Matti do.	793	...	19,060	410	...	13,000	.....	6,060	
Miscellaneous rafters ...	120			142					
Blackwood rafters ...	...	...	.....	2	...	10,000	.....	4,850	
Jirait pieces	22,277	...	14,850	16,263	...	.....	.....	40	
Slabs	125	...	40	...	...	23,000	.....	10,950	
Total ..	...	...	33,950						
Kolába Division.									
Teak poles and miscellaneous pieces	757	...	125	1,877	7,500	750	625	.....	
Ratnágiri Division.									
Teak poles and pieces ...	267	...	18-4-0	2,461	...	575	556-12-0	.....	
Total Timber ...	...	...	5,06,712-9-0			4,32,378	4,943-3-0	79,277-12-0	
Northern Division of Kánara.			FIREWOOD.						
Firewood ... ... Tons.	283	...	1,520	388	...	2,440	920	.....	
Charcoal ... ... Muras.	23	...	6	23	...	6	.....	.....	
Total ...	...	...	1,526			2,446	920	.....	

FORM No. 57—*continued.*

Description of Timber and other Produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in Value.		Remarks.
	No.	Cubic feet.	Value.	No.	Cubic feet.	Value.	In favour of the year.	Against the year.	
			FIREWOOD—*continued.*						
Central Division of Kánara.			Rs.			Rs.	Rs.	Rs.	
Firewood... ...Stacks.	38	...	24	358	...	264	240	.....	
Belgaum Division.									
Firewood ... ...Stacks.	11,003	...	11,000	7,036	3,51,800	7,036	.....	3,964	
Fuel...	...	4,46,675	26,800½	...	...	.....	.....	26,800½	
Total ...	...	...	37,800½			7,036	.....	30,764½	
Dhárwár Division.									
Firewood ... ...Stacks.	2,269	...	2,269	4,817	...	4,817	2,548	.....	
Total Firewood ...	...	...	41,619½			14,563	3,708	30,764½	
			BA'MBUS.						
Belgaum Division... ...	...	...	.....	1,500	...	36	36	.....	
Total Bámbus ...	...	...	.....			36	36	.....	
Northern Division of Kánara.			SANDALWOOD.						
Trees	...	...	.....	153	...	200	200	.....	
Central Division of Kánara.									
Sandalwood... Khandis.	...	...	.....	...	14-16-14	480	480	.....	
Southern Division of Kánara.									
Sandalwood... Khandis.	...	11-6-21	150	...	36-13-25	2,800	2,650	.....	
Dhárwár Division.									
Roots	25	...	25	440	...	100	75	.....	
Chips and Saw-dust Khandis.	...	...	.....	...	3-1-3	60	60	.....	
Total ...	...	...	25			160	135	.....	
Total Sandalwood ...	...	...	175			3,640	3,465	.....	
Northern Division of Kánara.			MINOR PRODUCE.						
Hirda ... ...Khandis.	...	183	2,069	...	73	703	.....	1,366	
Central Division of Kánara.									
Hirda ... ...Khandis.	...	135-10½	1,526	...	93-2-15	950	...	576	
Shigekai .. ... ,,	...	5-18-21	137	...	3-8-14	60	.....	77	
Grass ... ...Bundles.	165,518	...	595	147,444	...	530	.....	65	
Total ...	...	...	2,258			1,540	.....	718	
Southern Division of Kánara.									
Hirda ... .. Khandis.	...	356	4,027	...	727	7,270	3,243	.....	
Belgaum Division.									
Hirda ... ...Khandis.	...	104	962	...	45-19-21	425	....	537	
Dhárwár Division.									
Grass ... Bundles.	1,000	...	5	...	...	.....	.....	5	
Hirda ... Baskets.	...	...	.....	41½	...	30	30	.....	
Total ...	...	...	5			30	30	5	
Total Minor Produce ..	...	...	9,321			9,968	3,273	2,626	
Grand Total ...	...	...	5,57,828-1-0			4,60,585	15,425-3-0	1,12,668-4-0	

Net difference against the year Rs. 97,243-1-0.

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 57 A.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Abstract showing the Value of Live and Dead Stock for the year 1888-89.

Description of Live and Dead Stock.	On hand at commencement of the year.		On hand at the close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.	
		Rs.		Rs.	Rs.	Rs.	
Direction.							
Office tent, 13" × 13" (new)	1	450	1	450	...	...	
Do. do. (old)	1	450	1	450	...	...	
Tools, plant and office furniture	...	250	...	250	...	...	
Total ...	...	1,150	...	1,150	...	...	
Northern Division of Kánara.							
Forest bungalow at Haliyál	1	2,700	1	2,700	...	...	
Range Forest Office at do.	1	900	1	900	...	...	
Forest Nakas	10	9,016*	12	9,815	799	...	* In last year's statement this was Rs. 9,011.
Forest bungalow at Kadra	1	8,100	1	8,100	...	...	
Two houses at Kadra	2†	...	...	...	...	...	† Petty huts of no use; hence left to tumble down.
Kolibag Depot house	1	4,960	1	4,960	...	...	
Hill tent	1	350	1	350	...	...	
Tools, plant and office furniture	...	2,721‡	...	2,794	73	...	‡ In last year's statement this was Rs. 2,726.
Total ...	...	28,747	...	29,619	872	...	
Central Division of Kánara.							
Forest bungalows at Yellápur	2	3,050	2	3,050	...	...	
Workshop at do.	1	114	1	114	...	...	
Rest house at Kolikeri	1	908	1	908	...	...	
Naka Houses	10	2,951	11	3,351	400	...	
Old Range Office at Yellápur	1	250	1	250	...	...	
Rest-house at Ramanguli	1	150	1	150	...	...	
Tent	1	350	1	350	...	...	
Tools, plant and office furniture	...	5,116§	...	5,126	10	...	§ In last year's statement this was Rs. 7,128, including the value of live stock, which is shown separately in this statement.
Bunaloes and bullocks	44	1,809	39	1,393	...	416	
Total ...	...	14,698	...	14,692	410	416	
Kánara Saw Mills.							
Engine, portable, 12 H.-P.	2		2				
Anvils	2		2				
Small circular saw benches	2		2				
Crab-winch	2		2				
Saw frame, horizontal, with 16 old saws ...	1		1				
Forges, portable	1		1				
Quern	1		1				
Hauling machine	1	45,240	1	40,716	...	4,524	
Lathe	1		1				
Rack, circular	1		1				
Saw-sharpening machines	2		1				
Corrugated roof-shed	1		2				
Vice	1		1				
Engine, portable, 12 H.-P.	1		1				
Band cross-cutting	1		1				
Saw-sharpening machine	1	11,064	1	9,958	...	1,106	
Vertical saw frame, with 12 new and 24 old	1	3,750	1	3,375	...	375	
Engine, portable, 12 H.-P.	1	4,400	1	3,960	...	440	
Logs, small circular saws	2	1,388‖	2	1,249	...	139	‖ In last year's statement this was Rs. 105
Axes	2	58	2	52	...	6	
Chamber blocks	6	112	...	...	...	112	
Iron line shafting	1	83	1	75	...	8	
Other stores and furniture	...	6,163¶	...	5,547	...	616	¶ In last year's statement this was Rs. 6,152.
Total ...	...	72,258	...	64,932	...	7,326	

FORM No. 57 A—*continued.*

Description of Live and Dead Stock.	On hand at commencement of the year.		On hand at the close of the year.		Difference in Value.		Remarks.
	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.	
		Rs.		Rs.	Rs.	Rs.	
Southern Division of Kánara.							
Office building at Sirsi	...	...	1	950	950	...	
Forest Nákás	17	6,221	18	6,521	300	...	
Office tent	1	350	1	350	...	...	
Tools, plant and office furniture	...	2,952*	...	3,068	116	...	* In last year's statement this was Rs. 3,184.
Total ..	...	9,523	...	10,889	1,366	...	
Belgaum Division.							
Tent	1	300	1	300	...	...	
Rest-house	1	2,500	1	2,500	...	...	
Nákás	14	5,950†	15	6,120	170	...	† In last year's statement this was Rs. 6,050.
Tools, plant and office furniture	...	2,745‡	...	2,789	44	...	‡ In last year's statement this was Rs. 2,790.
Total ...	...	11,495	...	11,709	214	...	
Dhárwár Division.							
Rest-house	1	800	1	800	...	...	
Watch-houses	8	2,400	9	2,700	300	...	
Depôt houses	2	250	2	250	...	...	
Tents	2	380	2	380	...	...	
Tools, plant and office furniture	...	2,790§	...	3,095	305	...	§ In last year's statement this was Rs. 2,454.
Total ...	...	6,620	...	7,225	605	...	
Bijápur Division.							
Office tent	1	150	1	150	...	...	
Tools, plant and office furniture	...	713	...	812	99	...	
Total ...	...	863	...	962	99	...	
Kolába Division.							
Hill tent	1	250	1	250	...	...	
Forest boat with fittings	1	1,278	1	1,278	...	...	
Tools, plant and office furniture	...	574‖	...	574	..	...	‖ In last year's statement this was Rs. 448.
Bullock	1	30	1	30	...	...	
Total ...	...	2,132	...	2,132	...	...	
Ratnágiri Division.							
Office tent	1	200	1	200	...	...	
Tools, plant and office furniture	...	173¶	...	173	...	...	¶ In last year's statement this was Rs. 172.
Total ...	...	373	...	373	...	...	
Grand Total ...	...	1,47,859	...	1,43,683	3,566	7,742	

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

FORM No. 58.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Summary of Revenue and Expenditure of the different Divisions during the year 1888-89.

Budget Heads.	Direction.	Northern Division of Kánara.	Central Division of Kánara.	Southern Division of Kánara.	Belgaum Division.	Dhárwár Division.	Bijápur Division.	Ratnágirl Division.	Kolába Division.	Total.
REVENUE.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
I.—Timber and other Produce removed from the Forests by Government Agency—										
a. Timber	.....	2,83,642 3 0	1,45,906 4 9	33,867 4 3	25,720 15 2	69,006 12 5	.....	9,910 10 9	10,342 4 3	5,78,396 6 7
b. Firewood and charcoal	.....	17,641 3 8	167 10 9	10 4 0	1,57,657 14 6	14,281 8 0	.....	364 10 6	625 14 0	1,90,749 1 5
c. Bambus	.....	.....	20 0 0	.....	62 6 0	.....	.....	.....	.....	82 6 0
d. Sandalwood	.....	.....	1,501 2 10	3,117 4 5	23 13 0	2,267 3 2	0 10 0	.....	.....	6,910 1 5
e. Grass and other minor produce	.....	18,779 15 9	4,117 14 10	21,829 3 10	57,679 14 0	1 4 0	.....	38 12 0	4 6 9	1,02,451 7 2
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers—										
a. Timber	.....	13,965 8 11	15,703 2 11	20,737 7 8	3,508 1 2	251 4 6	1,352 13 6	869 10 2	70,078 5 2	1,26,466 6 0
b. Firewood and charcoal	.....	25,832 4 4	16,686 15 0	1,990 7 11	6,347 4 4	852 15 4	9,782 5 7	149 1 6	29,180 0 10	90,821 6 10
c. Bambus	.....	39,408 11 8	13,734 15 5	764 4 0	7,020 11 6	7,827 12 10	.....	.....	12 0 0	68,768 7 5
d. Grazing and fodder grass	.....	6,837 0 6	6,676 15 1	8,649 12 7	19,495 14 0	16,289 11 3	5,696 12 0	310 8 1	1,922 3 10	65,878 13 4
e. Other minor produce	.....	2,243 0 6	7,307 3 0	7,375 2 10	5,865 3 10	1,121 11 7	10,658 4 7	16 14 9	888 15 8	35,476 8 9
III.—Confiscated, Drift, and Waif Wood	.....	106 6 9	73 5 10	730 4 4	51 8 3	10 1 7	15 12 9	73 1 9	500 8 9	1,561 2 0
IV.—Revenue from Forests not managed by Government—										
a. Duty on foreign timber and other forest produce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
b. Revenue from shared and private forests ...	.....	.....	.....	.....	.....	.....	.....	58 13 11	7 8 0	66 5 11
V.—Miscellaneous—										
a. Fines and forfeitures	.....	120 2 7	26 11 3	219 8 0	386 3 9	4 4 0	152 8 4	251 2 3	1,439 15 0	2,600 7 2
b. Refunds...	306 9 9	197 0 9	242 11 5	36 10 8	13 1 2	123 15 1	15 8 10	.....	194 13 5	1,130 7 1
c. Other sources	.....	350 1 4	485 3 10	128 4 11	231 0 9	720 13 11	14 3 2	6 6 0	258 3 4	2,194 5 3
Total Revenue ...	306 9 9	4,09,123 11 9	2,12,650 4 11	99,455 15 5	2,84,063 15 5	1,12,759 5 8	27,688 14 9	12,049 11 8	1,15,455 3 0	12,73,553 12 4
EXPENDITURE.										
A.—CONSERVANCY AND WORKS.										
I.—Timber and other Produce removed from the Forests by Government Agency—										
a. Timber	.....	1,05,952 12 9	73,309 11 7	8,960 1 8	9,817 6 9	11,065 0 3	.....	1,974 0 9	2,423 2 11	2,13,502 4 8
b. Firewood and charcoal	.....	10,412 0 9	166 15 0	.....	63,605 4 4	3,799 0 3	.....	.....	15 14 0	77,999 2 4
c. Bambus	.....	.....	.....	.....	54 10 0	.....	.....	.....	.....	54 10 0
d. Sandalwood	.....	61 13 0	211 1 7	599 9 10	.....	387 7 10	.....	.....	.....	1,260 0 3
e. Grass and other minor produce	.....	8,988 13 5	1,705 8 2	12,291 2 10	19,013 1 0	5 3 0	.....	16 2 9	.....	42,019 15 2
II.—Timber and other Produce removed from the Forests by Consumers or Purchasers	.....	1,087 3 0	686 6 9	1,098 12 4	1,252 7 3	1,957 10 0	70 4 9	.....	885 5 10	7,038 1 11
III.—Confiscated, Drift and Waif Wood	.....	.....	2 3 0	12 14 0	0 8 0	.....	.....	2 9 6	30 12 9	48 15 3
IV.—Revenue from Forests not managed by Government—										
a. Duty on Foreign Timber and other forest produce	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
b. Revenue from shared and private forests ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

V.—Rent of Leased Forests and payments to Share-holders in Forests managed by Government ...	.....	.....	.....	.....	.....	.....	.....	117 3 4	9,359 2 1	9,476 5 5
VI.—Live Stock, Stores, Tools and Plant—										
a. Purchase of cattle	.....	.....	232 8 0	.....	.....	.....	.....	.....	.....	232 8 0
b. Feed and keep of cattle	.....	.....	803 9 9	.....	.....	.....	.....	.....	40 0 0	843 9 9
c. Stores, tools, and plant	.....	6 0 0	374 4 0	4 8 0	.....	523 2 9	0 12 0	.....	13 0 9	921 11 6
VII.—Communications and Buildings—										
a. Roads and Bridges	.....	71 11 0	524 13 4	436 5 6	915 0 0	.....	.....	25 2 0	.....	1,972 15 10
b. Buildings	.....	1,012 10 4	1,103 4 5	1,270 0 0	266 7 8	589 14 9	12 0 0	6 10 6	19 4 8	4,280 4 4
c. Other Works	.....	17 4 6	23 6 6	405 13 0	8 3 0	30 7 3	.....	1 4 0	.....	486 6 3
VIII.—Demarcation, Improvement and Extension of Forests—										
a. Demarcation	.....	1,969 8 8	2,824 13 0	874 10 0	3 6 0	.....	57 8 6	66 14 0	874 10 7	6,671 6 9
b. Compensation for land and rights	.....	300 0 0	.....	.....	.....	.....	.....	.....	.....	300 0 0
c. Surveys and working plans	.....	47,220 10 4	.....	.....	.....	84 3 3	.....	.....	.....	7,304 13 7
d. Plantations	.....	863 6 10	125 14 0	2,183 12 8	50 15 0	20 8 6	220 1 0	119 6 0	11 3 0	3,595 3 0
e. Protection from fire	.....	1,248 7 6	702 0 9	150 8 0	654 15 0	292 6 0	51 0 9	.....	220 6 0	3,319 12 0
f. Other works	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
IX.—Miscellaneous—										
a. Refunds...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
b. Law charges	.....	.....	.....	.....	.....	.....	.....	295 0 3	.....	295 0 3
c. Other charges	.....	25 15 0	25 10 9	392 8 3	81 7 3	31 8 0	22 12 6	0 15 0	250 0 0	830 12 9
TOTAL A.—Conservancy and Works ...	.....	1,79,238 5 1	82,822 2 7	28,680 10 1	95,723 11 3	18,786 7 10	434 7 6	2,625 4 1	14,142 14 7	4,22,453 15 0
B.—ESTABLISHMENTS.										
I.—Salaries—										
a. Conservators	12,000 0 0	.....	.....	.....	.....	.....	.....	.....	.....	12,000 0 0
b. Superior Officers	.....	19,322 0 4	3,000 0 0	8,525 11 2	6,600 0 0	9,600 0 0	7,992 7 9	1,997 5 10	4,703 8 9	61,741 1 10
c. Subordinate Forest and Depôt Establishments	.....	16,925 14 11	12,150 4 5	11,557 2 10	20,551 13 5	12,410 0 1	7,509 5 9	5,320 1 5	21,295 4 2	1,07,719 15 0
d. Office Establishments...	6,202 13 7	3,330 9 6	3,179 10 7	2,707 5 7	2,419 9 8	1,709 8 1	1,002 6 2	975 0 6	2,201 2 9	23,728 2 5
e. Deputation and special allowances ...	32 8 0	.....	.....	.....	.....	.....	.....	.....	.....	32 8 0
II.—Travelling Allowance—										
a. Conservators	2,413 0 0	.....	.....	.....	.....	.....	.....	.....	.....	2,413 0 0
b. Superior Officers	.....	5,698 13 0	1,296 12 5	2,543 8 0	1,800 0 0	1,648 15 5	1,800 0 0	764 8 3	1,732 10 5	17,285 3 6
c. Subordinate Forest and Depôt Establishments	.....	1,444 6 0	581 8 5	650 9 9	828 14 8	1,087 2 6	256 6 4	471 12 2	958 11 10	6,279 7 8
d. Office Establishments...	1,917 8 5	958 4 6	903 6 5	810 1 3	632 5 10	528 7 4	387 6 8	412 0 0	643 0 4	7,192 8 9
III.—Contingencies—										
a. Stationery	8 3 0	160 13 8	428 9 9	187 13 6	201 6 10	175 0 3	97 13 9	93 2 3	349 10 6	1,702 9 6
b. Carriage of tents and records	678 14 8	477 5 0	688 12 6	203 6 8	173 9 0	187 11 6	67 2 3	96 12 0	160 14 6	2,734 8 1
c. Rents, rates and taxes	400 0 0	20 15 8	240 0 0	.....	376 0 0	109 0 9	111 0 0	310 0 0	36 12 5	1,603 12 10
d. Pay of Police guards	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
e. Official postage...	196 5 6	311 13 6	418 13 0	329 12 0	396 10 0	352 5 6	123 5 6	142 5 6	285 1 0	2,556 7 6
f. Sundries	246 5 7	732 7 9	652 10 9	622 6 8	1,017 1 11	846 6 7	558 5 5	309 9 7	1,172 5 3	6,157 11 6
Total B.—Establishments ...	24,095 10 9	49,383 7 10	23,540 8 3	28,137 13 5	34,997 7 4	28,654 10 0	19,905 11 7	10,892 9 6	33,539 1 11	2,53,147 0 7
Grand Total of Expenditure ...	24,095 10 9	2,28,621 12 11	1,06,362 10 10	56,818 7 6	130,721 2 7	47,441 1 10	20,340 3 1	13,517 13 7	47,682 0 6	6,75,600 15 7

No. $\frac{F}{14,891}$.

Forwarded to the Conservator of Forests, Southern Circle, under Section 238 of the Forest Department Code.

Bombay, 13th August 1889.

A. F. COX,
Acting Accountant General.

FORM No. 59.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Account Current for the year 1888-89.

Cr.

	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.
To Cash Balance	.....	25 1 5	By 1. Refunds and Drawbacks—		
„ VIII. Assessed Taxes—Income Tax—			Refunds Divided Heads—		
Deductions by Government from Salaries and Pensions	.....	2,285 12 11	Forest	.....	1,187 12 2
„ IX. Forest	.....	12,73,553 12 4	„ 11. Forest	.....	6,75,600 15 7
„ XII. Interest—			„ Revenue Deposits—		
Interest on arrears of Revenue	.....	79 11 0	Forest	.....	26,246 12 2
„ Revenue Deposits—			„ Advances Recoverable—		
Forest	.....	25,159 14 8	Forest Advances	3,52,234 12 6	
„ Advances Recoverable—			Objection Book Advances	692 8 0	
Forest Advances	3,59,392 15 6		Tentage Advances	.....	
Objection Book Advances	919 8 0				3,52,927 4 6
Tentage Advances to Gazetted Officers	220 0 0		„ Cheques and Bills—		
		3,60,532 7 6	Departmental Cheques—		
„ Cheques and Bills—			Forest Cheques cancelled	.....	100 0 0
Departmental Cheques—			„ Forest Remittances—		
Forest Cheques drawn	.....	6,47,995 13 4	Remittances to Treasuries	10,53,386 1 11	
„ Forest Remittances—			Inter-Divisional Transfers	38,487 2 11	
Remittances to Treasuries	3,371 1 3		Inter-Departmental Transfers	2,464 9 2	
Inter-Divisional Transfers	48,241 9 10				10,94,337 14 0
Inter-Departmental Transfers	20,670 9 6		„ Cash Recoveries	.....	6,437 1 2
		72,283 4 7	„ Suspense Accounts	.....	100 0 0
„ Cash Recoveries	.....	6,437 1 2	„ Account between Bombay and Marine—		
„ Supense Accounts	.....	100 0 0	IV. Items adjustable by Marine—		
„ Account between India and Bombay—	.....		Miscellaneous	.....	3,249 6 4
III. Items adjustable by India—			„ Account between Bombay and Military—Bombay—		
Topographical Survey	.....	15,412 0 0	IV. Items adjustable by Military—		
„ Account between Bombay and Public Works Department (Ordinary Branches)—			Miscellaneous	.....	5,421 3 6
IV. Items adjustable by Public Works Department—			„ Account between Bombay and Public Works Department—Bombay (Ordinary Branches)—		
Payments into Treasuries by Civil Officers on account of Public Works Department	.....	150 0 0	IV. Items adjustable by Public Works Department—		
„ Account between Bombay and Public Works Department (Railway Branches)—			Inter-Departmental Charges	.....	4,928 0 8
Southern Maratha Railway—			„ Account between Bombay and Public Works Department (Railway Branches)—		
IV. Items adjustable by Public Works Department	.....	0 3 2	Southern Maratha Railway—		
			IV. Items adjustable by Public Works Department	.....	2,33,197 7 3
			Closing Balance	.....	281 4 9
Grand Total	.....	24,04,015 2 1	Grand Total	.....	24,04,015 2 1

No. $\frac{F}{15}$.

Forwarded to the Conservator of Forests, Southern Circle, under Section 238 of the Forest Code.

Bombay, Accountant General's Office, 13th August 1889.

A. F. COX,
Acting Accountant General.

FORM No. 60.

FORM No. 60.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

Revenue received and Outstandings on account of Revenue during 1888-89.

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	REMARKS.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Northern Division of Kanára.	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	85,022 11 4	3,34,919 13 0	4,19,942 8 4	2,83,642 3 0	1,36,300 5 4	
	b. Firewood and charcoal	950 0 0	16,691 3 8	17,641 3 8	17,641 3 8	.....	
	c. Grass and other minor produce ...	.....	18,779 15 9	18,779 15 9	18,779 15 9	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	15,308 0 11	15,308 0 11	13,965 8 11	1,342 8 0	
	b. Firewood and charcoal	.....	29,872 3 4	29,872 3 4	25,832 4 4	4,039 15 0	
	c. Bambus	.....	39,408 11 8	39,408 11 8	39,408 11 8	.....	
	d. Grazing and fodder grass	.....	6,837 0 6	6,837 0 6	6,837 0 6	.....	
	e. Other minor produce	46 2 8	2,355 3 10	2,401 6 6	2,243 0 6	158 6 0	
	III.—Confiscated, drift and waif wood ...	.....	106 6 9	106 6 9	106 6 9	.....	
	Total, Northern Division of Kánara ...	86,018 14 0	4,64,278 11 5	5,50,297 9 5	4,08,456 7 1	1,41,841 2 4	
Central Division of Kanára.	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	16,859 6 10	1,56,831 2 2	1,73,690 9 0	1,45,906 4 9	27,784 4 3	
	b. Firewood and charcoal	141 6 0	26 4 9	167 10 9	167 10 9	.....	
	c. Bambus	.....	20 0 0	20 0 0	20 0 0	.....	
	d. Sandalwood	60 12 0	1,478 10 11	1,539 6 10	1,501 2 10	38 4 0	
	e. Grass and other minor produce ...	7 4 7	4,124 10 2	4,131 14 9	4,117 14 10	13 15 11	
	II—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	17,415 12 1	17,415 12 1	15,703 2 11	1,712 9 2	
	b. Firewood and charcoal	250 0 1	16,436 14 11	16,686 15 0	16,686 15 0	.....	
	c. Bambus	.....	13,734 15 5	13,734 15 5	13,734 15 5	.....	
	d. Grazing and fodder grass	.....	6,676 15 1	6,676 15 1	6,676 15 1	.....	
	e. Other minor produce	26 0 0	7,441 9 8	7,467 9 8	7,307 3 0	160 6 8	
	III.—Confiscated, drift and waif wood ...	.....	73 5 10	73 5 10	73 5 10	.....	
	Total Central Division of Kánara ...	17,344 13 6	2,24,260 4 11	2,41,605 2 5	2,11,895 10 5	29,709 8 0	

Southern Division of Kánara-	*I.—Timber and other produce removed from the forests by Government agency—*					
	a. Timber	13,063 3 0	38,088 11 10	51,151 14 10	33,867 4 3	17,284 10 7
	b. Firewood	.....	10 4 0	10 4 0	10 4 0	.....
	d. Sandalwood	.....	3,117 4 5	3,117 4 5	3,117 4 5	.....
	e. Grass and other minor produce ...	.....	21,829 3 10	21,829 3 10	21,829 3 10	.....
	II.—Timber and other produce removed from the forests by consumers or purchasers—					
	a. Timber	35 13 8	22,109 11 1	22,145 8 9	20,737 7 8	1,408 1 1
	b. Firewood	27 7 3	2,012 15 11	2,040 7 2	1,990 7 11	49 15 3
	c. Bambus	.....	766 12 0	766 12 0	764 4 0	2 8 0
	d. Grazing and fodder grass ...	.....	8,649 12 7	8,649 12 7	8,649 12 7	.....
	e. Other minor produce	141 5 4	7,491 9 6	7,632 14 10	7,375 2 10	257 12 0
	III.—Confiscated, drift and waif wood ...	.....	730 4 4	730 4 4	730 4 4	.....
	Total, Southern Division of Kánara ...	13,267 13 3	1,04,806 9 6	1,18,074 6 9	99,071 7 10	19,002 14 11
Belgaum ...	*I.—Timber and other produce removed from the forests by Government agency—*					
	a. Timber	1,427 0 0	24,382 11 2	25,809 11 2	25,720 15 2	88 12 0
	b. Firewood	.....	1,57,657 14 6	1,57,657 14 6	1,57,657 14 6	.....
	c. Bambus	.....	62 6 0	62 6 0	62 6 0	.....
	d. Sandalwood	.....	23 13 0	23 13 0	23 13 0	.....
	e. Grass and other minor produce ...	.....	57,679 14 0	57,679 14 0	57,679 14 0	.....
	II.—Timber and other produce removed from the forests by consumers or purchasers—					
	a. Timber	.....	3,508 1 2	3,508 1 2	3,508 1 2	.....
	b. Firewood	5 2 0	6,342 2 4	6,347 4 4	6,347 4 4	.....
	c. Bambus	.....	7,020 11 6	7,020 11 6	7,020 11 6	.....
	d. Grazing and fodder grass	.....	19,495 14 0	19,495 14 0	19,495 14 0	.....
	e. Other minor produce	.....	5,865 3 10	5,865 3 10	5,865 3 10	.....
	III.—Confiscated, drift and waif wood ...	.....	51 8 3	51 8 3	51 8 3	.....
	Total, Belgaum ...	1,432 2 0	2,82,090 3 9	2,83,522 5 9	2,83,433 9 9	88 12 0
Dhárwár ...	*I.—Timber and other produce removed from the forests by Government agency—*					
	a. Timber	12,630 0 0	63,094 5 11	75,724 5 11	69,006 12 5	6,717 9 6
	b. Firewood	9 8 0	14,272 0 0	14,281 8 0	14,281 8 0	.....
	d. Sandalwood	.....	2,267 3 2	2,267 3 2	2,267 3 2	.....
	e. Grass and other minor produce ...	.....	1 4 0	1 4 0	1 4 0	.....
	II.—Timber and other produce removed from the forests by consumers or purchasers—					
	a. Timber	.....	251 4 6	251 4 6	251 4 6	.....
	b. Firewood	.....	852 15 4	852 15 4	852 15 4	.....
	c. Bambus	.....	7,827 12 10	7,827 12 10	7,827 12 10	.....
	d. Grazing and fodder grass	.....	16,289 11 3	16,289 11 3	16,289 11 3	.....
	e. Other minor produce	.....	1,121 11 7	1,121 11 7	1,121 11 7	.....
	III.—Confiscated, drif and waif wood ...	.....	10 1 7	10 1 7	10 1 7	.....
	Total, Dhárwár ...	12,639 8 0	1,05,988 6 2	1,18,627 14 2	1,11,910 4 8	6,717 9 6

FORM No. 60—*continued.*

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Bijápur ...	*I.—Timber and other produce removed from the forests by Government agency—*						
	d. Sándalwood	.....	0 10 0	0 10 0	0 10 0	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	.....	1,352 13 6	1,352 13 6	1,352 13 6	.....	
	b. Firewood	.....	9,782 5 7	9,782 5 7	9,782 5 7	.....	
	d. Grazing and fodder grass	.....	5,696 12 0	5,696 12 0	5,696 12 0	.....	
	e. Other minor produce	.....	10,658 4 7	10,658 4 7	10,658 4 7	.....	
	III.—Confiscated, drift and waif wood ..	.....	15 12 9	15 12 9	15 12 9	.....	
	Total, Bijápur ...	.....	27,506 10 5	27,506 10 5	27,506 10 5	.....	
Kolába... ...	*I.—Timber and other produce removed from the forests by Government agency—*						
	a. Timber	.....	10,342 4 3	10,342 4 3	10,342 4 3	.....	
	b. Firewood	.....	625 14 0	625 14 0	625 14 0	.....	
	e. Grass and other minor produce ..	.....	4 6 9	4 6 9	4 6 9	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	a. Timber	4,830 0 0	65,248 5 2	70,078 5 2	70,078 5 2	.....	
	b. Firewood	900 0 0	30,405 0 10	31,305 0 10	29,180 0 10	2,125 0 0	
	c. Bambus	.....	12 0 0	12 0 0	12 0 0	.....	
	d. Grazing and fodder grass	.....	1,922 3 10	1,922 3 10	1,922 3 10	.....	
	e. Other minor produce	.....	888 15 8	888 15 8	888 15 8	.....	
	III.—Confiscated, drift and waif wood ...	.....	500 8 9	500 8 9	500 8 9	.....	
	Total, Kolába ...	5,730 0 0	1,09,949 11 3	1,15,679 11 3	1,13,554 11 3	2,125 0 0	

Ratnágiri ...	*I.—Timber and other produce removed from the forests by Government agency—*					
	a. Timber	.....	9,910 10 9	9,910 10 9	9,910 10 9	.....
	b. Firewood	.....	364 10 6	364 10 6	364 10 6	.....
	e. Grass and other minor produce ...	.....	38 12 0	58 12 0	38 12 0	.....
	II.—Timber and other produce removed from the forests by consomers or purchasers—					
	a. Timber	.....	869 10 2	869 10 2	869 10 2	.....
	b. Firewood	.....	149 1 6	149 1 6	149 1 6	.....
	d. Grazing and fodder grass	.....	310 8 1	310 8 1	310 8 1	.....
	e. Other minor produce	.....	16 14 9	16 14 9	16 14 9	.....
	III.—Confiscated, drift and waif wood ...	.....	73 1 9	73 1 9	73 1 9	.....
	Total, Ratnágiri ...	.....	11,733 5 6	11,733 5 6	11,733 5 6	.....
Total, Southern Circle ...	*I.—Timber and other produce removed from the forests by Government agency—*					
	a. Timber	1,29,002 5 2	6,37,569 11 1	7,66,572 0 3	5,78,396 6 7	1,88,175 9 8
	b. Firewood and charcoal	1,100 14 0	1,89,648 3 5	1,90,749 1 5	1,90,749 1 5	.....
	c. Bambus	.....	82 6 0	82 6 0	82 6 0	.....
	d. Sandalwood	60 12 0	6,887 9 5	6,948 5 5	6,910 1 5	38 4 0
	e. Grass and other minor produce ...	7 4 7	1,02,458 2 6	1,02,465 7 1	1,02,451 7 2	13 15 11
	II.—Timber and other produce removed from the forests by consumers or purchasers—					
	a. Timber	4,865 13 8	1,26,063 10 7	1,30,929 8 3	1,26,466 6 0	4,463 2 3
	b. Firewood and charcoal	1,182 9 4	95,853 11 9	97,036 5 1	90,821 6 10	6,214 14 3
	c. Bambus	.....	68,770 15 5	68,770 15 5	68,768 7 5	2 8 0
	d. Grazing and fodder grass	.....	65,878 13 4	65,878 13 4	65,878 13 4	.....
	e. Other minor produce	213 8 0	35,839 9 5	36,053 1 5	35,476 8 9	576 8 8
	III.—Confiscated, drift and waif wood ...	.....	1,561 2 0	1,561 2 0	1,561 2 0	.....
	Grand Total ...	1,36,433 2 9	13,30,613 14 11	14,67,047 1 8	12,67,562 2 11	1,99,484 14 9

Conservator's Office, Southern Circle:
Dated Belgaum, 16th November 1889.

J. L. L. MacGREGOR,
Conservator of Forests, Southern Circle

FORM No. 61.

FOREST DEPARTMENT, BOMBAY, SOUTHERN CIRCLE.

*Outstandings and Liabilities on account of Contractors and Disbursers for 18*8-89.*

Division.	DEPARTMENT DEBTOR.			DEPARTMENT CREDITOR.			BALANCE DUE.		REMARKS.
	At commencement of year.	Recoveries in cash and value of supplies and work done during year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To Department (Outstandings).	By Department (Liabilities).	
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Contractors.									
Belgaum	.....	56,371 1 4	56,371 1 4	6,797 7 1	49,584 4 6	56,381 11 7	10 10 3	.....	
Bijapur	.....	179 2 0	179 2 0	.....	179 2 0	179 2 0	.....	.....	
Dhárwár	.....	1,250 0 0	1,250 0 0	50 0 0	1,450 0 0	1,500 0 0	250 0 0	.....	
Northern Division of Kánara ...	.....	18,746 10 4	18,746 10 4	293 13 9	18,824 12 7	19,118 10 4	372 0 0	.....	
Central Division of do. ..	.....	10,775 0 0	10,775 0 0	.....	10,775 0 0	10,775 0 0	.....	.....	
Southern Division of do. ...	.....	101 0 0	101 0 0	.....	101 0 0	101 0 0	.....	.....	
Ratnágiri	.....	1,850 0 0	1,850 0 0	.....	1,850 0 0	1,850 0 0	.....	.....	
Total Contractors ..	.....	89,272 13 8	89,272 13 8	7,141 4 10	82,764 3 1	89,905 7 11	632 10 3	.....	
Disbursers.									
Belgaum	.....	50,435 14 8	50,435 14 8	1,833 11 11	50,306 8 0	52,140 3 11	1,704 5 3	.....	
Bijápur	.....	8,170 11 11	8,170 11 11	45 4 9	8,125 7 2	8,170 11 11	.....	.....	
Dhárwár	.....	20,329 10 6	20,329 10 6	.....	20,329 10 6	20,329 10 6	.....	.....	
Northern Division of Kánara ...	.....	89,497 8 8	89,497 8 8	3 3 9	89,494 4 11	89,497 8 8	.....	.....	
Central Division of do. ...	.....	29,590 9 1	29,590 9 1	1,115 13 6	29,703 4 2	30,819 1 8	1,228 8 7	.....	
Southern Division of do. ...	.....	46,224 2 6	46,224 2 6	3,576 7 8	45,529 14 8	49,106 6 4	2,882 3 10	.....	
Kolába	.....	25,383 3 8	25,383 3 8	4 11 0	25,504 12 0	25,509 7 0	126 3 4	.....	
Ratnágiri	.....	488 4 10	488 4 10	11 8 10	476 12 0	488 4 10	.....	.....	
Total Disbursers ...	.....	2,70,120 1 10	2,70,120 1 10	6,590 13 5	2,69,470 9 5	2,76,061 6 10	5,941 5 0	.....	
Grand Total ...	.....	3,59,392 15 6	3,59,392 15 6	13,732 2 3	3,52,234 12 6	3,65,966 14 9	6,573 15 3	.....	

No. $\frac{F}{1482}$

Forwarded to the Conservator of Forests, Southern Circle, with reference to para. 238 of the Forest Department Code.

Bombay, Accountant General's Office, 13th August 1889.

A. F. COX.
Acting Accountant General.

ANNUAL FORM No. 62.

Forest Department, Bombay, Southern Circle.

Financial results of the year 1888-89.

Division.	Timber and other produce removed from the Forests by Government agency.		Other Revenue.		Formation, protection and improvement of Forests.	Total.	
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Direction	...	...	307	24,096	...	307	24,096
Northern Division of Kánara ...	3,20,170	1,50,938	88,954	3,171	74,513	4,09,124	2,28,622
Central Division of do. ...	1,51,786	88,422	60,864	7,148	10,793	2,12,650	1,06,363
Southern Division of do. ...	59,122	29,602	40,334	15,560	11,656	99,456	56,818
Belgaum	2,41,145	1,10,387	42,919	10,479	9,855	2,84,064	1,30,721
Dhárwár	85,557	34,749	27,202	9,267	3,425	1,12,759	47,441
Bijápur	1	...	27,688	5,082	15,258	27,689	20,340
Kolába	10,972	23,031	1,04,483	12,364	12,287	1,15,455	47,682
Ratnágiri	10,387	7,439	1,662	413	5,665	12,049	13,517
Total ...	8,79,140	4,44,568	3,94,413	87,580	1,43,452	12,73,553	6,75,600

J L. L. MacGREGOR,
Conservator of Forests, Southern Circle.

Conservator's Office, Southern Circle,
Dated Belgaum, 16th November 1889.

No. 105 of 1890.

Revenue Department.

Kánara Districts,
Camp Kárwár, 15th January 1890.

MEMORANDUM.

The accompanying report on the forest administration of the Southern Circle for the year 1888-89 is submitted to Government with the following remarks.

2. Paragraph 4.—Government orders have been issued on the Forest Settlement Report of 21 villages of the Honávar Táluka (*vide* Government Resolution No. 8772, dated 19th November 1889.

3. Paragraph 9.—The issue of Government orders on the Forest Settlement Reports of Pen, Nágothna, &c., apparently awaits the settlement of the question of dálhi cultivation. It is most desirable that these reports should be disposed of as early as possible.

4. Paragraph 10.—The reports on the Bijápur settlements were necessarily, and with the approval of Government, returned for further consideration, in connection with the Divisional Forest Officer's proposals respecting "fuel and fodder reserves." The latter, which had been in no way checked, amounted to proposals for the inclusion in forest of much larger areas than was contemplated in the Forest Settlement Officer's reports. No maps were, in most cases, forthcoming, and lands in inám villages, as well as inám lands in Government villages, were embraced in the Divisional Forest Officer's scheme. It was, in the circumstances, impossible to approve, or even to form an opinion on the Settlement Officer's reports.

5. Paragraph 17.—A special officer has been appointed to complete the forest settlement work in the Belgaum and Dhárwár Districts (*vide* Government Resolution No. 6066, dated 17th August 1889).

6. Paragraphs 32 to 40.—It is satisfactory to note that while the number of prosecutions increased, the percentage of unsuccessful cases has fallen. In the undersigned's opinion some explanation should have been forthcoming of the decrease in cases compounded in the Bijápur District from 310 to 89. In all other districts, except North Kánara, there was an increase, and only 14 cases were taken into Court in Bijápur.

7. Paragraphs 41 to 54.—The orders passed by Government in Government Resolution No. 1942, dated 24th March 1888, are practically inoperative in a large portion of the Southern Circle, owing to the smallness of the free grazing area. It seems desirable to introduce some analogous penalty, and the Acting Commissioner recommends that the suggestion offered by the Conservator last year—to levy double grazing fees during the following season, when the incendiaries are not detected—be tried as an experiment in the forests of Kánara, Dhárwár and Belgaum. If the villagers generally are to blame for the actual fires, it is more than probable that they could largely assist in detecting the offenders.

8. Paragraphs 55 to 58.—The extension of the successful measures adopted in Belgaum for the collection of grazing fees to Kánara and Dhárwár is likely to lead to further growth of revenue from that source.

9. Paragraphs 59 to 65.—The orders contained in Government Resolution No. 6487, dated 3rd September 1889, will remove any substantial ground of complaint arising from the grazing of sheep and goats in forests. The Acting Commissioner is under the impression that it has, since the close of the year, been prohibited in Belgaum as well as in Bijápur.

10. Paragraphs 66 to 73.—No very marked progress seems to have been made in the important branch of Artificial Regeneration, but the Conservator's orders, as detailed in paragraph 72, seem likely to lead to very useful results.

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11. Paragraphs 85 to 96.—There was a large falling off in the demand for teak prices for sleepers and for running fuel for the Southern Marátha Railway Company.

12. Paragraphs 106 to 118.—There is a decrease in both revenue and expenditure, in the former, mainly owing to the causes mentioned in paragraph 11. The Conservator has called for an explanation of the excess over last year (Rs. 63,052) in amount of outstandings.

13. Paragraphs 119 to 120.—The main want seems to be increased facilities for transport. To provide these, the Conservator advocates the construction of a light railway or tramway from Nágargáli or from Haliyál, or Alnáwar to Pótóli, a distance of 21 or 28 miles according to the route adopted, and of about 10 miles of tram for supply of fuel to the Southern Marátha Railway. The former of these two proposals is already under the consideration of Government, and the latter has been referred to the Railway Company, with a view to ascertaining whether they are prepared to take the work in hand themselves.

G. F. M. GRANT,
Acting Commissioner, S. D.

No. 4422 of 1889-90.

From

The CONSERVATOR of FORESTS,
Southern Circle;

To

The CHIEF SECRETARY to GOVERNMENT,
Revenue Department,
Bombay.

Yellápur, Kánara Districts,
28th January 1890.

Sir,

I have the honour to furnish the report called for in Government Resolution No. 8144, of 26th October 1889, regarding the state of reproduction in the Southern Circle.

I.—Moist-zone, rainfall 40—300 inches, comprising all Kánara, Kolába, West Dhárwár and Western Belgaum.

2. Excepting in the evergreen jungles of the Ghâts, reproduction *by seed* is poor throughout the Circle. I attribute the badness of the reproduction principally to fires, and in a less degree to grazing and damage done to young growth by graziers and others. During the rains great numbers of seedlings come up which are killed by fires. Large quantities are also eaten by cattle which feed on nothing but young shoots and leaves during the hot weather when no grass is fit to eat. On the crest and slopes of the Ghâts, where the jungles have been much kumried, there are large expanses of forest-land which are either quite bare or covered with *karwe* or scrub. These lands have so deteriorated, or the grass or scrub is so dense, that, even if fires could be excluded and grazing stopped, it would in all probability be impossible that they should become re-clothed with trees, or that seedlings could be got to grow, for many decades. The complete failure of numerous attempts to re-stock even freshly-made kumri-lands shows how difficult it is to re-clothe the slopes of the Western Ghâts after they have been cleared by fire. Kumriválás have generally chosen the highest and steepest slopes of the hills for cultivation. The steepest slopes are best adapted for their purpose because weeds are least troublesome on steep ground, but the consequence is almost absolute barrenness. In former times, when forests were not considered of any importance, men were encouraged to kumri anywhere on the Ghâts. Kumri has not been stamped out yet by any means, but its spread has been considerably retarded.

3. In the evergreen forests, which are most extensive on the western slopes of the Ghâts, fire cannot penetrate (owing to the density of the jungle) and the grazing is extremely bad, there being no grass and few edible leaves. The natural consequence is excellent reproduction from self-sown seed. It is impossible to give the area of these evergreen tracts which are scattered and have not been separately demarcated. I dare say there may be some 400 square miles of evergreen or semi-evergreen forest in the Circle, but this is a mere guess.

4. The rest of the forest-area has been traversed by fire for years and years, and it is only quite recently that any attempts have been made to cope with fires. It appears probable from an investigation of the growth of numerous trees which have been cut down and examined during the last two years, that fires have regularly overrun the deciduous forests of Kánara for about 100 years, but that before that period they did not occur, or only at such wide intervals as not to affect to an appreciable extent the growth and reproduction of the forest.

5. All beginnings are difficult, and our first attempts to stop fires in the face of immemorial custom and prejudice have assuredly been no easy task, although they cannot be said to have completely failed. If the reports of areas actually protected could be relied on, I think the officers of the Circle might be fairly

congratulated on the comparative success of the undertaking. A year or two hence, it will be possible to say positively what the result of these protective measures is likely to be, but, as yet it seems to me too early to say if they have materially assisted natural reproduction. Last season was the first in which attempts were made to protect large areas.

6. It is needless to say that hitherto natural reproduction by seed has been extremely bad in the fire-traversed areas, and Messrs. Bell and Oliver, who have minutely examined the area (117,414 acres) to be tapped by the proposed railway from Nágargali to Gund, report that the whole is quite devoid of seedlings.

7. The system which prevails of girdling timber-trees also prevents reproduction from stools, so that the most valuable trees must gradually disappear unless fires can be kept out.

8. Of artificial reproduction by means of planting and sowing little need be said. Seed was sown broad-cast in suitable places last season for the first time, and the regular plantations were protected from fire as usual. On the whole, the regular plantations even in this moist region are not very flourishing, excepting the casuarina-plantations on the shore which can scarcely be considered results of *reproduction*. The teak-plantations about Barchi, Kadra, Singatgeri and Bomanhalli are growing fairly well, but the mistake has been made of not mixing them with other species.

9. 'I have little doubt that any money available for regeneration can be most advantageously employed in protecting the forest from fire, in sowing seeds broad-cast in suitable places, and in putting down seedlings taken from other parts of the forest in places where timber-trees have been cut out of the forest in jardinage. The planting-up of bare wastes is a very uncertain and very expensive process, as the young plants have to be watered for a couple of years and the ground weeded; even with all this care, they never succeed as well as the self-sown seedling which grows up under the partial cover of the forest and in an environment exactly suited to its own nature. If protection from fire and cattle be afforded, the grassy open wastes which have not become utterly barren will gradually become covered with trees by the surrounding forest pushing its way further and further into the open, but to attempt the direct reboisement of denuded areas before the forest-clad area has been improved and properly stocked does not appear to me expedient.

II.—Dry-zone, rainfall 15—40 inches, including East Belgaum, East Dhárwár and Bijápur.

10. The forest-lands in these districts are either quite bare or covered with more or less thorny coppice and scrub. Reproduction from coppice-shoots is generally good in spite of fires which traverse the whole area every year, excepting an insignificant area which has been protected from fire. These small forests naturally consist chiefly of coppice as, owing to fires, seedlings cannot come up except under the most favourable conditions. Nevertheless, it has been found, even in the extremely dry district of Bijápur, that where there is a little cover, seedlings of *nim* and bamboos can be successfully raised without watering by protecting the jungle from fire and cattle. This has been done on a small scale in the Bádámi and Bágalkot Tálukas, and arrangements are being made to close a fair proportion of the whole area for regeneration. The regular plantations in this zone are very expensive and are certainly not looking well. Here, as elsewhere in the Circle, I propose to stop attempting regular plantations, which at best are a mere drop in the ocean, and to devote all money available for regeneration to the carrying-out of measures to protect the forests from fire and grazing and to the broad-cast sowing of seeds, or the planting of seedlings which do not require expensive nurseries, nor watering. We will, in this manner, be able to deal with comparatively large areas commensurate with the area of the whole forest. Practically, reproduction by seed in the whole of this zone is *nil*, the few selected patches of jungle in which reproduction of this nature can be shown being insignificant as compared with the whole.

III.

11. In the above account I have referred as much to the measures now being introduced to promote natural reproduction by seed, as to the actual state of reproduction, because Government might otherwise think that we are not paying sufficient attention to this all-important matter. The state of the forests in regard to reproduction by seed is, I admit, unsatisfactory: but it must be remembered that no attempts were ever made to protect the jungles from either fire or cattle previously to 1887-88; that the first season's work was very limited; that the executive and protective staff has much to learn in the matter of fire-protection; that the closing to grazing of portions of forests is a work which requires the marking-off and careful selection of such areas, and is, consequently, a slow process.

I have, &c.,

(Signed) J. L. L. MacGREGOR,

Conservator of Forests, Southern Circle.

SIND CIRCLE.

No. 828 of 1889-90.

From

THE CONSERVATOR OF FORESTS, SIND CIRCLE,

To

THE SECRETARY TO GOVERNMENT,
REVENUE DEPARTMENT.

Conservator's Office,

Hyderabad, 10th September 1889.

Sir,

I have the honor to forward herewith the Forest Administration Report of the Sind Circle for the year 1888-89 with its subsidiary statements.

I have the honor to be,

Sir,

Your most obedient Servant,

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

(Through the Commissioner in Sind.)

ANNUAL ADMINISTRATION REPORT OF THE SIND FOREST DEPARTMENT FOR THE YEAR 1888-89.

Introduction.

An area of 49,471 acres was added to the Sind Circle during the year under report.

2. The regular demarcation of forests in Sind may be said to have been completed, and no expenditure was incurred during the year under the head of Forest Demarcation and Settlement.

3. The general protection of the forests and the rate of reproduction in areas cleared in the working of previous years was found to be highly satisfactory.

4. The number of fires compared with the year 1887-88 is the same, but owing to conditions being more favourable to the spread of fires, the area burnt is double that of the previous year.

5. The railway authorities did not indent for a fresh supply of wood during the year under report till very late in the year, as they had a large stock of wood on hand from the quantity taken over during the year 1887-88.

6. An application was received for a monopoly of the right to purchase babul bark for export to Europe for ten years, and an offer also was made from a local contractor to purchase a large quantity of bark during the year. The grant of a monopoly not being considered desirable by the Commissioner in Sind, the offer of the local contractor was accepted.

7. A monopoly for three years of right of exporting wood to Bombay and Katch Mandvi was sanctioned by the Commissioner in Sind with a view to stimulating trade in wood between Sind and the Presidency proper.

8. The financial results are not so satisfactory as they might have been owing to the falling of in the consumption of wood fuel by the railway.

CHAPTER I.

Area and Boundaries.

9. The following table gives the area of the Sind Forests as it stood on 31st March 1888, and also the areas added thereto and deducted therefrom:—

Name of Division.	Area as it stood on 31st March 1888.				Area added during the year or gained by action of the river.				Area excluded during the year or lost by action of the river.				Area as it stood on 31st March 1889.			
	Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.		Reserved.		Protected.	
	Sqr. Miles.	Acres	Sqr. Miles.	Acres	Sqr. Miles.	Acres	Sqr. Miles.	Acres	Sqr. Miles.	Acres	Sqr. Miles.	Acres	Sqr. Miles.	Acres	Sqr. Miles.	Acres
Sukkur	415	430	1	128	34	596	...	...	3	430	...	...	456	605	1	128
Naushahro	186	460	...	..	40	578	...	...	2	230	...	...	225	177	...	...
Hyderabad	172	73	...	...	3	380	...	...	6	221	...	...	169	232	...	...
Jerruck	108	149	...	...	13	495	...	...	...	140	...	...	122	164	...	...
Total	883	170	1	128	93	129	...	...	12	381	...	...	973	538	1	128

The losses and gain of area, due to the changes in the course of the river, have been very extensive, but the former have involved newly formed lands, almost exclusively, and the loss of mature timber-bearing land has been very small. The chief loss has been in grazing grounds, the Hyderabad Division being the chief sufferer. The following figures show the loss and gain in each Division:—

	Area lost.	Area gained.
Sukkur	2,350 Acres	6,958 Acres.
Naushahro	1,510 „	850 „
Hyderabad	4,061 „	2,300 „
Jerruck	140 „	70 „

10. A sum of Rs. 3,277 was spent in keeping the eroding banks clear of trees to prevent their falling into the river and endangering navigation.

11. Of the material resulting from erosion fellings, Rs. 4,672-12-5 worth was disposed of during the year, and Rs. 2,263-12-0 worth still remained on hand at its close.

12. The dispute as to the right of the Forest Department to a large area of alluvial land in the Sukkur Division alluded to in para. 10 of last year's report has been satisfactorily settled.

13. A new departure was taken this year in the settlement of kacha disputes between the Forest Department and the Khairpur State. Hitherto all disputes have been settled under the Alluvion and Diluvion Rules published under Rules under "Special Local Acts." But in a dispute involving a very large area which had been thrown up, and the greater part of which was claimable by the Forest Department under the rules, along the bank where the boundary of the Khairpur State touches the Mohbatdero Forest, it was held by the Commissioner in Sind that the Alluvion and Diluvion Rules did not apply in the settlement of disputes with Foreign States, and the settlement was made by prolonging the boundary in a straight line about due west, the direction of the old boundary between the forest and the Khairpur State. This line is to be the basis of settlement of all further disputes if the land is again washed away and re-appears. It has the merit of preventing any further disputes if the Khairpur officials can be made to abide by it, if the curve of the next accretion favours them instead of the Forest Department, as it did on this occasion.

14. The areas notified under Section 19 of the Forest Act during the year under report are given below :—

Name of Forest.	Taluka.	Area in acres.
Garhi Yasin	Naushahro Abro	25,328
Dilmurad	Thul	49
Mirpur	Thul	6,978
Karampur	Thul	6,060
Jangan	Thul	2,291
Katcha Alibhar	Sujawal	3,000
Do. Suejani	Sujawal	3,410
Do. Kote Almo	Sujawal	2,335
Milkiat Sarcar	Jacobabad	20
		49,471

15. The following table gives the lands that have been selected for reservation, but have not yet been finally notified under Section 19 :—

Name of Forest.	Taluka.	Area in Acres.
Ali Ganj	Tatta	431 20
Hilaya		849 18
Shah Louko		312 10
Tatta		12,388 30
Garko		933 23
Chhachh		3,361 27
Khairwah	Jacobabad	56 30
Gokulpur		64 30
Tarai	Naushahro Abro	2,349 5
Chango Rahuja		1,749 35
Chbi		3,132 20
Adamji		4,352 25
Phohyroi		473 4
Musti Khan		225 0
Nurketi	Hala	643 5
Drago	Ghotki	2 5

16. The regular demarcation of forests in Sind may be said to have been completed, but it may be found desirable to take up certain large areas of waste land near the banks of the river in the Hyderabad Collectorate, that can yield little or nothing to Government in their present condition, but which under proper management could be converted into babul forests to meet the growing demand for firewood due to the establishment in the district, of cotton and other mills worked by steam power, and also to meet the larger demand for babul firewood by the railway, which now takes this kind of wood in unrestricted proportion with other wood.

17. There was no expenditure incurred during the year under the head of forest demarcation and settlement.

CHAPTER II.

SURVEYS, WORKING PLANS, AND ANNUAL PLANS OF OPERATIONS.

18. The survey of the forests on a large scale giving all details of topography, nature of growth, &c., was continued.

Two surveyors were employed throughout the year with the following results in areas surveyed :—

Division.	Forest.	Area Surveyed.
Sukkur	Bhindi Dhareja	6,533 Acres.
„	Kadrapur	2,085 „
„	Deda	282 „
Jerruck	Penah	6,196 „
„	Khirsar	1,387 „
„	Susati	250 „

No change has been made in the system of working the forests, and there is nothing fresh of any interest to note under this head.

19. The work of cutting the forest up into compartments was continued and good progress made. The operation is approaching completion, but remains to be carried out in the newly acquired reserves, and in some of the old forests of the Jerruck Division.

20. The boundaries of all the reserves notified up to date have been laid down by cleared sides and boundary mounds as far as time and funds permitted.

CHAPTER III.

Protection and Improvement. Section 1.—Establishments.

21. Mr. G. M. Ryan, Assistant Conservator of Ferests, was in charge of the Sukkur Division from the beginning of the year till 2nd May, when he was relieved by Mr. A. Stewart, Deputy Conservator of Forests. Mr. Ryan's health had suffered from the effects of the climate in Sukkur during the previous hot weather, and a change to Lower Sind was considered advisable. Mr. Stewart remained in charge of the Sukkur Division during the rest of the year. Mr. Tuljaram, Sub-Assistant Conservator of Forests, served in the Sukkur Division throughout the year.

22. The Naushahro Division was under the charge of Mr. Neribdas Jethmal, Sub-Assistant Conservator of Forests, throughout the year.

23. The Hyderabad Division was in the charge of Mr. Showkiram Peribdas, Sub-Assistant Conservator of Forests, from the 9th April to the end of the year. Mr. Hexton, who had held charge of this Division up to the date given above, was transferred by the orders of Government to the Presidency proper. Mr. Hexton, who served in Sind during the greater part of his service, had a thorough knowledge of the Sind forests and the people in and around them, and with whom he had great personal influence. I was very sorry to lose his services.

24. The Jerruck Division was in charge of Mr. Stewart, Deputy Conservator of Forests, up to May, when Mr. Ryan assumed charge on transfer from Sukkur.

Section 2.—General protection and breaches of forest law.

25. The general protection of the forests was good and the conduct of the Protective Establishment on the whole satisfactory, though I regret to have to report same cases of misconduct. Forester Khanchand, Sukkur Division, was reduced from 2nd to 3rd Grade for carelessness and suspected connivance at an attempted fraud. Forester Anandrai, of the same Division, was found in possession of a quantity of rafters he had removed for his own use from the forests under his charge, but for which he produced a receipt said to have been given by one Sidik, from whom the rafters were said to have been purchased. But on enquiry Sidik repudiated the transaction, and the receipt was found to be a forgery. During the departmental enquiry by the Divisional Forest Officer, Forester Anandrai behaved with great insolence, and accused the Divisional Forest Officer to me of having struck him and foully abused him.

As the accusations made by Anandrai were found to be entirely false, and there did not appear to be a shadow of doubt as to his guilt in respect of the rafters, I dismissed him and ordered him to be prosecuted.

A complaint was lodged against him on 14th December 1888 before the City Magistrate, Shikarpur, but owing to frequent postponements granted in the hearing of the case, it was still pending when the year under report came to a close.

26. A comparative table showing the cases tried before Magistrates for breaches of forest law during the year under report, and the one preceeding it, is given below :—

Name of Division.	Number of cases tried before Magistrates.		Number of convictions.	
	1887-88.	1888-89.	1887-88.	1888-89.
Sukkur	102	84	62	46
Naushahro	11	8	7	7
Hyderabad	11	10	7	8
Jerruck	6	3	2	2
Total...	130	105	78	63

The results compare favourably with those of last year as regards proportion of convictions to the number of cases tried, and the number of cases actually tried are also much fewer in the year under report than the preceding one, but I cannot assign any special reason for this improvement.

27. A statement giving the number of petty offences compounded under Section 67 of the Indian Forest Act will be found below :—

Name of Division.	Illicit grazing.		Theft.		Other offences.		Compensation.	
	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
							Rs.	Rs.
Sukkur	498	514	127	73	17	7	3,159	2,659
Naushahro	32	103	20	24	...	10	82	149
Hyderabad	233	117	48	119	...	...	307	720
Jerruck	428	493	42	5	2	28	793	788
Total ...	1,191	1,227	237	221	19	45	4,341	4,316

The offences under the head of theft show a decrease, but those under illicit grazing and other offences, which consist chiefly of lopping by goatherds, are more numerous, as compared with the figures of the former year. This is not so unsatisfactory as it would appear at first sight. The facilities for illicit grazing and lopping are great and the offences are not uncommon, the detection of a larger number of such offences points merely to greater vigilance on the part of Forest guards.

28. There were two cases of serious assault on Forest guards by cattle-breeders. In one a conviction was obtained, but in the other the Magistrate let the offenders off because there was a slight discrepancy in the statements of two of the witnesses for the prosecution, which appears to have justified him in giving the offenders the benefit of the doubt and holding that the Forest guards, who had been thrashed, had been over zealous in the discharge of their duty.

Section 3.—Fires.

29. The number of fires is the same as in 1887-88, but the area burnt is more than double as large. Though this is the case the fires have not been so extensive or as destructive as they are in some years. The chief increase in the area burnt is in the Sukkur Division in Upper Sind, caused by incendiary fires lighted by cattle-breeders for the sake of new grass, and by the increse of fires into the forest, lighted outside forest limits, by cultivators.

30. Enquiries were made from the District Officers of the Revenue Department as to the extent they were able to give effect to the suggestion's made in Government of India's No. 110 F of 30th January 1889, but the answers elicited show that these officers were either unable to do very much, or did not understand the scope of their obligations in the matter. In the Naushahro and Hyderabad Divisions there is also an increase in the area burnt. In the former Division the most extensive forest fire was caused by the officials of the Khairpur State, who deliberately set fire to the jungle to clear the ground for the purpose of facilitating the settlement of a boundary dispute. The matter has been brought to the notice of the Political Agent. In the Hyderabad Division the fires were evidently incendiary for the sake of new grass. Owing to the low inundation of the previous year and want of rain the existing grass was coarse and dry. It was found necessary to close burnt areas to check these incendiary fires.

31. A statement of the number of fires and the area burnt is given below :—

Name of Division.	Number of Fires.		Area burnt.	
	1887-88.	1888-89.	1887-88.	1888-89.
Sukkur	58	61	1,843	3,946
Naushahro	12	8	1,178	2,078
Hyderabad	11	15	301	1,013
Jerruck.....	13	10	250	238
Total ...	94	94	3,572	7,275

32. The following is a statement of the area protected :—

Name of Division.	Area attempted to be protected.		Failures.		Area actually protected.	
	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.	Sqr. Miles.	Acres.
Sukkur	458	93	6	106	451	627
Naushahro	60	484	3	158	57	326
Hyderabad	45	403	1	373	44	30
Jerruck	29	634	...	238	29	396
Total ...	594	334	11	235	583	99

The results cannot be compared with last year's figures, as I have eliminated from the "area protected" all such areas as are not in any real danger of suffering from forest fires, either by reason of the density and shade of large tree growth practically preventing the existence of grass and under wood, or owing to the land from the saline nature of the soil or other causes being unproductive of grass reeds or other herbage likely to be fired.

Section 4.—Grazing.

33. The province had suffered again from a deficiency of rain and the river side forests in Central and Lower Sind that are within reach of the pastrol tribes in the hilly tracts on the west were resorted to in numbers exceeding even those of last year, and were, without doubt, the means of saving thousands of cattle that would otherwise have perished for want of fodder on the hills.

34. The chief grazing grounds are to be found in the "kachas" or newly formed alluvial lands in the river frontages of river side forests. These tracts not only afford abundant natural fodder for cattle, but such land before it has risen high enough by the yearly deposit of silt, during the inundation season, to be fit for the growth of trees of any value, is very suitable for the raising of fodder crops. The Forest Department permits crops of this kind to be raised on them, and this adds immensely to the comfort and prosperity of the pastrol population in the neighbourhood of the Government Reserves. Some Revenue officers view with great disfavour the possession of "kachas" by the Forest Department, and think it would be better to clear and devote them to cerial cultivation, if possible. There is not only a vast area of waste land in the province, far in excess of all possible requirements for agriculture, both in "kachas" and ordinary land, but it would be as stupid as it would be cruel to ignore the wants of the pastoral section of the population by not holding in reserve grazing grounds that are independent of rain, in a province that has such a scanty and precarious rainfall, and in which a drought may extend for a whole year.

35. A statement of the number of cattle permitted to graze free is given below :—

Buffaloes	926
Horned cattle	4,333
Horses and donkies	53

Section 5.—Natural Reproduction.

36. In the river side forests of the Sukkur Division the compartments cleared in the fellings for locomotive fuel were closed to grazing, for reproduction, which is reported to be satisfactory from coppice shoots. The compartments that had been closed in previous years inspected by myself showed very good results; the areas of which the trees had been cleared being everywhere reclothed with fresh growth, but the inundation of the previous year had been a very low one, and there is much dry grass in the compartments under reproduction which is a source of great danger from forest fires, which yearly do very great damage and seriously retard the restocking of forest areas that have been worked out. In the Jacobabad districts and in Reserves lying within the protective embankment not capable of irrigation direct from the river, natural reproduction is slow and unsatisfactory, and this state of things must continue till the canal power of the district is increased and water can be made available for the irrigation of the Reserves. It is only in tracts where the land is sweet and good throughout that the roots of the trees, principally kandi (*prosopis specigera*) have reached low enough to make them independent of surface irrigation,

which has been cut off by the erection of the protective embankment. In patches where the roots in their downward course to find moisture have encountered deep belts of sand or saline soil, the trees have either died or exist merely as stunted bushes. When the trees *have* established themselves it is surprising to see with what vigour they continue to grow and coppice if cut down. A considerable proportion of the fellings this year for locomotive fuel have taken place on land that has been worked and cleared within the last eight or ten years, and on which the tree growth had re-appeared under simple but efficient protection, but without any artificial surface irrigation whatever.

37. In the Naushahro Division 1348 acres of cleared land was closed for natural reproduction. Out of this an area of 353 was given out for cerial cultivation for one season, with a view to assisting the coppice and fresh growth with the water brought on to the land for irrigating the crop, the cultivator undertaking to cut flush with the ground all gnarled and stunted bushes and to leave the land strongly fenced in after the removal of the grain crop. I inspected all the land so treated, and found that over about half the area where the cultivators had carried out their agreements honestly the results were highly satisfactory, but where the fences had been put up more for show than use, the fresh growth had been seriously injured or destroyed by goats and other animals that had found their way into the enclosures. The natural reproduction in areas closed in previous years was on the whole satisfactory, but many of the reserves in this Division suffer greatly for want of water, and it will be many years before funds can be made available for works necessary for their irrigation.

38. No fresh closures were made in the Hyderabad Division, as the annual fellings were taken in hand so late in the season that none of the compartments that were being worked were quite cleared and ready for closing before the end of the year. The reproduction in compartments previously closed was quite satisfactory. Natural reproduction in this Division is easy and certain, and the reserves may fairly be claimed to be maintained fully stocked either with mature or young growth.

39. Six hundred and forty-three small beams of babul timber were removed from Sekhat Forest. The age of the trees that gave them was known to be about 11 to 12 years. They were cut for thinning in compartments that were closed for reproduction in 1876-77.

40. Fellings for babul bark were made in compartments, the growth in which is that of less than twelve years. The results up to end of March 1889 are as follows :—

Area cleared	150 acres.
Number of selected trees left to grow into building timber per acre at an average	15 „
Total quantity of bark...	4,649 maunds.
Total quantity of firewood...	20,718 maunds.

41. In the Jerruck Division the fellings were also commenced very late and no fresh closures were made. Conditions are not so favourable to natural reproduction on the whole in this Division as they are in Hyderabad, owing to the fact that a large part of the forest area lies within protective embankments and its irrigation; though it is practicable by sluices and canals provided for the purpose, yet the quantity of water that can be let into the forests is limited owing to the danger of spill from the forests injuring cultivation beyond their limits, and this state of things cannot be remedied till funds can be found for the erection of certain embankments to prevent

the escape of water out of the forests. Where the forests are capable of being properly irrigated the success and rate of reproduction leaves nothing to be desired. A compartment was being worked for railway and other fuel this season that was closed in 1878 after having been entirely cleared.

Section 6.—Artificial Reproduction.

42. There is nothing in this province that can be fairly classed under this head, beyond the scattering of tree seed when required in closed compartments, and sowing it in land given out for cultivation for a season or more with a view to raising tree seedlings and encouraging coppice growth with the crop and closing the land when they are established. An area of 25 acres was treated under this plan in the Hyderabad Division and 268 acres in the Jerruck Division; one hundred and ninety maunds of babul and kandi seed was scattered in closed compartments that required it.

43. In the Sukkur Division two plots of 25 acres each were planted with cuttings of tali, *Dalburgia Sissu*, and tree tamarisk, but the results have not been good, much damage was done by frost. Two acres were added to the tali plantation in the Abad range near Sukkur, which has been such a success, as already reported in former reports. Other gardens and plantations were kept up, but there is nothing fresh of any interest to add concerning them.

Section 7.—Experiments.

44. *Prosopis Glandulosa*, the seed of which was sent by Government for experiment in 1877-78, having giving results which tend to show that it would probably grow under natural conditions in the Sind forests, broadcast sowings of its seed raised in the plantations have been made from time to time in different parts of the Miani range, Hyderabad Division, but so far with no results. This year I ordered a quantity of seed to be sown on ploughed land that had been moderately flooded. The seed germinated freely, but it remains to be seen whether the seedlings will survive the next hot weather and inundation.

45. The spare land in the mangoe plantation in the Miani range, Hyderabad Division, was again given out for cultivation on the share arrangement with the following results :—

Area cultivated.....	10 acres.
Total yield.....	Rs. 974
Government share	„ 487

The crop of cotton partially failed over 4 acres for want of sufficient supply of water due to early fall of the river.

46. The bamboo plantation, of which mention has been made in former reports, has for some years been left unirrigated, except by such water as finds its way into it during very high floods. Its present condition proves that bamboos will not grow in Sind unless artificial irrigation is maintained, under these circumstances it could never pay to grow them.

Section 8.—Communication and Buildings.

47. In the Sukkur Division a small building was erected in Shikarpur for the use of the men employed in the issue and collection of passes for

firewood at a cost of Rs. 140-15-2, and a small house costing Rs. 49-11-2 was put up for the use of the Range Forest Officer, Sadhuja range, to replace one that had been destroyed by a flood. Existing buildings were repaired as usual.

48. In the Naushahro Division a new house was built for Range Forest Officer, Sehwan, at a cost of Rs. 101-0-0. No new buildings were put up in any of the other Divisions. Ordinary repairs to existing buildings were carried out.

CHAPTER IV.

YIELD AND WORKING.

SECTION 1.—DEPARTMENTAL OPERATIONS.

49. The following statement shows the details of the working of Departmental Depôts :—

Name of Depôt.	Stock on hand on 1st April 1888.			Added during the year 1888-89.			Disposed of during the year 1888-89.			Balance on 31st March 1889.		
	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.	Timber.	Posts and Rafters.	Fuel.
	C. ft.	No.	Mds.	C. ft.	No.	Mds.	C. ft.	No.	Mds.	C. ft.	No.	Mds.
Shikarpur	.....	.....	.....	652	18,749	200	325	9,947	... ..	327	8,802	200
Sukkur	8,622	8,234	91	4,040	6,497	1,200	3,284	6,014	1,/25	9,378	8,917	266
Rohri	956	4,920	.....	1,297	14,376	.....	1,877	18,449	.....	376	847	.....
Larkana	.....	1,900	3,309	.....	.....	1,400	.....	1,633	4,428	.....	267	281
Sehwan	.....	13,995	.....	.....	4,900	.....	.....	13,729	.....	.....	5,166	.....
Tatta	229	1,640	.....	.....	.....	.....	8	1,640	.....	221	.....	.....
Keti Bandar	.....	.....	156	7,843	.....	2,531	7,510	.....	812	333	.....	1,875
Kotri	911	80	33,279	472	.....	1,17,957	860	80	1,18,960	523	.....	32,276
Hyderabad	5,934	44,739	40,055	3,224	1,81,176	48,836	6,107	1,73,566	87,246	3,051	52,349	1,645
Total...	16,652	75,508	76,890	17,528	2,25,693	1,72,124	19,971	2,25,058	2,12,471	14,209	76,148	36,543

50. The quantity of timber and fuel sold at each depôt is given below :—

Name of Depôt.	Timber, c. ft.		Posts and Rafters, number.		Fuel, maunds.	
	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
Shikarpur	1,460	325	16,942	9,947	...	...
Sukkur	5,326	3,284	56,798	6,014	8,909	1,025
Rohri	823	1,877	10,733	18,449	...	...
Larkana	438	...	1,301	1,633	3,888	4,428
Sehwan	...	...	10,501	13,729	...	...
Karachi	1,743	...	...	...	...	...
Tatta	265	8	82	1,640	...	...
Keti Bandar	8,529	7,510	...	...	313	812
Kotri	3,243	860	28	80	1,25,637	1,18,960
Hyderabad	1,235	6,107	1,50,503	1,73,566	66,762	87,246
Total...	23,062	19,971	2,46,888	2,25,058	2,05,509	2,12,471

51. A statement of the quantity of timber supplid to the Railway and other Departments, &c, on indent:—

Name of Department.	Babul logs.	Babul sleepers.	Babul bolsters.	Bahan rafters.
	No.	No.	No.	No.
North-Western Railway	4	.....	128	...
Karachi Harbour Works	.....	4,002	... ...	.....
Gun Carriage Factory	390	.....	.....	.....
Hyderabad Municipality	985	.....	.....	3,000

52. The quantity of timber cut departmentally and disposed of in the forests during the year is given below:—

Name of Division.	Timber.	Babul posts.	Jhau posts.	Bahan posts.	Bahan rafters.	Kirir rafters.	Jhau rafters.	Babul slabs.
	C. ft.	No.	No.	No.	No.	No.	No.	No.
Sukkur...	475	.....	.....	121	86	.....	.....	... ...
Naushahro	1,060	45	.....	100	19,050	410	3,380	...
Hyderabad	1,206	.....	.....	.....	3,000	.....	.....	22
Jerruck	89	.....	.....	.....	.....	.....	.....	700
Total...	2,830	45	.....	221	22,136	410	3,380	722

Except on eroding banks timber is only cut for disposal in the forest to meet requisitions made for it.

53. All the depôts were worked departmentally except the one in Hyderabad, which is worked on the share system.

54. In the Sukkur Division there is a very large falling off, due to the influx of timber imported from Foreign States. An application was made to Government with a view to putting a duty on Foreign timber to enable the Forest Department to recoup itself for the loss it suffers by Foreign importation of timber. But Government have desired that the selling prices in the Sukkur Division Depôts be reduced 20 per cent., with a view to ascertaining whether the reduction in price will increase sale. It may do so, but will not raise the revenue to its former level.

55. In the Naushahro Division the demand for large timber is so small that the stock in hand in 1887-88 was sold off and has not been renewed.

The sales in the smaller descriptions of timber show a small improvement.

56. In the Hyderabad Division there is a marked increase under all heads. Under timber the improvement is due to the glut in the market caused by the abnormally large sales of timber in 1886-87 having disappeared; under other heads to better demand, which has been progressive for the last few years.

57. In the Jerruck Division the Karachi and Tatta Depôts have been abolished, and the timber sold is merely the clearing off of old stock in the Tatta Depôt. The timber shown in the Keti Bandar Depôt is the timber for the Gun Carriage Factory in Bombay, which is passed through the depôt books as a check.

58. A statement showing the quantity of firewood supplied under departmental agency to the State Railway and other Departments and large consumers is given below:—

To whom supplied.	Firewood in Maunds.	
	1887-88.	1888-89.
North-Western Railway	15,43,278	3,72,476
Commissioner's Steamer	.....	13,925
Indus Ferry Steamers	1,02,437	1,61,350
River Conservancy Department	7,124	6,295
Public Works Department	.....	222
Karachi Harbour Works	45,514	50,827
Commissariat Department	26,582	24,857
Hyderabad Water Works...	52,000	41,000
Sukkur Municipality...	1,550	3,550
Hyderabad Jail...	2,344	2,572
Government Farm, Hyderabad...	13,000	7,750
Manager, Incumbered Estates	3,000	.....
Total...	17,96,829	6,84,824

The railway had accumulated such a lare stock of wood on hand that they withdrew their indent for the year commencing on 1st January 1888, and did not resume taking wood till the spring of 1889, hence the falling off in the quantity supplied. The large increase in the quantity supplied to Indus Ferry Steamers is all at Sukkur, but the reason for it is not given by the Divisional Forest Officer; it is probably due to the influx of people to visit the Sukkur Railway Bridge.

Section 2.—Removal of produce by purchasers.

59. The following is a statement of the value of timber and firewood removed from the forests other than that removed under the permit pass system :—

Name of Division.	Timber.		Firewood.	
	1887-88.	1888-89.	1887-88.	1888-89.
Sukkur	4,709	5,231	951	1,011
Naushahro	325	712	154	1,133
Hyderabad	1,322	2,515	859	2,934
Jerruck	913	934	432	368
Total...	7,269	9,392	2,396	5,446

60. The amount of fees paid on firewood brought for sale under the permit-pass system is as under:—

Name of Division.	Name of Ghat.	Revenue realized. 1887-88.	1888-89.
Sukkur	Rahuja, Thali, Rohri	12,631	10,763
	Sadar, Stewart, Khura	16,449	13,708
Naushahro	Larkana	2,599	2,666
	Gharhi	...	848
Hyderabad	New Fuleli, Old Fuleli, Hajipur	698	2,125
	Total Rs. ...	32,380	30,110

The falling off under this head is due to the larger number of passes issued by the Revenue Department for wood collected on waste land in the Shikarpur District.

Section 3.—Free Grant.

61. Free grants of timber to the value of Rs. 1,653-12-10 were made to poor villagers and to those who had suffered loss by fire or erosion of the river bank.

Section 4.—Summary of Produce.

62. The following is a statement of the timber worked out by departmental agency.

Name of Division.	Timber, cubic feet. 1887-88.	1888-89.	Posts, No. 1887-88.	1888-89.	Rafters, No. 1887-88.	1888-89.
Sukkur	7,982	6,721	11,212	6,927	73,261	26,827
Naushahro	526	1,422	2,965	829	46,342	37,843
Hyderabad	5,058	8,150	4,015	5,726	1,46,482	1,68,166
Jerruck	11,342	8,089	252	1,627	...	1,913
Total ...	24,908	24,382	18,444	15,109	2,66,085	2,34,749

63. The quantity of timber received by purchasers is as under :—

Name of Division.	Timber, cubic feet.		Posts, No.		Rafters, No.	
	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
Sukkur.....	3,627	6,434	980	1,579	78,911	1,10,852
Naushahro	1,412	2,223	...	200	7,029	8,167
Hyderabad	2,911	5,932	3,155	4,302	11,915	15,495
Jerruck	847	2,171	758	909	1,629	1,762
Total ...	8,797	16,760	4,893	6,990	99,484	1,36,276

64. The total yield in timber of each description is given below :—

Name of Division.	Timber, cubic feet.		Posts, No.		Rafters, No.	
	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
Sukkur.....	11,609	13,155	12,192	8,506	1,52,172	1,37,679
Naushahro	1,938	3,645	2,965	1,029	53,371	46,010
Hyderabad	7,969	14,082	7,170	8,881	1,58,397	1,83,661
Jerruck	12,189	10,260	1,010	2,536	1,629	3,675
Total ...	33,705	41,142	23,337	20,952	3,65,569	3,71,025

65. The total yield in firewood of each Division is as under :—

Name of Division.	Firewood.	
	1887-88.	1888-89.
Sukkur.....	12,98,252	7,43,008
Naushahro	4,83,451	1,60,255
Hyderabad	4,70,105	3,05,813
Jerruck	2,51,497	2,11,590
Total ...	25,03,305	14,20,666

66. The total yield in charcoal is as follows :—

Name of Division.	Charcoal.	
	1887-88.	1888-89.
Sukkur	2,050	2,167
Naushahro	5,756	4,408
Hyderabad	11,232	3,962
Jerruck	27,831	31,941
Total ...	46,869	42,478

67. The total yield of the Circle in timber, firewood, and charcoal is given below :—

Timber.....	1887-88	C. ft.	33,705
	1888-89	,,	41,142
Sleepers	1887-88	No.	5,301
	1888-89	,,	4,002
Posts	1887-88	No.	23,337
	1888-89	,,	20,952
Rafters	1887-88	No.	3,65,569
	1888-89	,,	3,71,025
Firewood.....	1887-88	Mds.	25,03,305
	1888-89	,,	14,20,666
Charcoal	1887-88	Mds.	46,869
	1888-89	,,	42,478

68. The realizations from the sale of farms to collect minor produce are given in the following statement :—

Name of Division.	Babul pods.		Lac.		Munj and Sar grass.		Fishery.	
	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89	1887-88.	1888-89.
Sukkur	240	455	...	...	614	681	2,008	1,933
Naushahro	1,633	3,518	...	...	413	503	504	779
Hyderabad	6,939	9,555	756	778	...	...	368	503
Jerruck	2,914	3,630	...	...	25	...	594	277
Total ...	11,726	17,158	756	778	1,052	1,184	3,474	3,492

The only point that need be noticed is the increase in the price of the farms of the right to collect babul pods for feeding cattle in the hot weather. This may fairly be claimed as the result of the successful efforts that have been made during the last twelve years to improve the condition of the babul forest in Central and Lower Sind. Extensive areas that ten years ago were quite open or sparsely covered with jungle that one could see over, now bear splendid babul forest growing fast into maturity.

The young trees have come into bearing within the last two or three years, and enormously increased the supply of babul pods available for picking.

69. An application was received from a gentleman in England who undertook to push the sale of babul bark as a tanning material, if he could be given the monopoly of the export of babul bark to Europe for ten years. There was also an offer from a local contractor, who agreed to take out 17,500 maunds of bark in a year and buy all the timber and firewood resulting from the fellings for bark. The grant of monopoly was not considered desirable by the Commissioner, and the offer of the local contractor was accepted, his agreement being for thirteen months, commencing from 1st July 1888 and ending on 30th July 1889. The conditions were that the contractor carry on his operations in compartments selected by the Forest Department, entirely clear them of all suitable trees, bear the cost of felling and stripping, and pay a royalty of Rs. 20 per 100 maunds on the bark and Rs. 61-4-0 on the firewood resulting from the fellings. Work was commenced as soon as possible and pushed on with great energy, and was progressing very satisfactorily, when, unfortunately, the contractor died of cholera in November. The contractor's security, after a little pressure, was induced to carry on the contract, but the chances of its satisfactory fulfilment are more than doubtful, as all enterprise in the undertaking died with the original contractor.

70. **The revenue from grazing fees was as under :—**

Name of Division.	Grazing fees.	
	1887-88.	1888-89.
Sukkur	17,268	17,656
Naushahro	8,135	8,875
Hyderabad	14,731	16,379
Jerruck	12,855	14,270
Total ...	52,989	57,180

71. Four thousand six hundred and forty-nine maunds of babul bark was removed from the forests by the contractor alluded to in para. 40.

Section V.—Export of Forest Produce.

72. Three hundred and ninety babul logs were exported to Bombay for the use of the Government Gun Carriage Factory.

73. Two lacs twenty-two thousand six hundred and twenty-five cubic feet of firewood was exported to Bombay, Katiawar, and other Ports.

74. With a view to stimulating the export trade in firewood a monopoly of all the wood that can be exported from the forests in Lower Sind was given to a contractor for three years, who agrees to buy a minimum of 3,00,000, 4,00,000, and 4,50,000 cubic feet respectively during the three years currency of his monopoly. The wood to be cut and stacked by departmental agency and delivered on the bank of the river. Failing to remove the minimum quantity agreed upon for each year the contractor to pay royalty on the quantity not taken at Rs. 17 per stack of 1,000 cubic feet and Rs. 11 per stack of 675 cubic feet.

Chapter V.—Financial Results.

75. The total receipts and expenditure during the last two years are as follows :—

	Actuals, 1887-88.	Actuals, 1888-89.	Increase.	Decrease.
Receipts	6,32,302	4,15,867	...	2,16,435
Expenditure A, Conservancy and Works	3,54,985	1,85,884	...	1,59,101
Ditto B, Establishment	1,11,142	1,00,227	...	10,915
Total Expenditure ...	4,66,127	2,86,111	...	1,70,016
Net Revenue ...	1,66,175	1,29,756	...	46,419

76. A statement of receipts and expenditure is given below :—

Receipts.	1887-88.	1888-89.
I. Timber and other produce removed from the forests by Government agency—		
(*a*). Timber	73,923	63,864
(*b*). Firewood and charcoal ...	4,19,430	1,96,303
(*c*). Grass and other minor produce ...	934	1,149
II. Timber and other produce removed from the forests by consumers, &c.—		
(*a*). Timber	7,269	9,391
(*b*). Firewood and charcoal ...	34,776	33,661
(*d*). Grazing and fodder grass ...	52,989	57,180
(*e*). Other minor produce ...	15,037	21,965
III. Confiscated, drift and waif wood ...	2	35
V. Miscellaneous	27,942	32,319
Total Receipts...	6,32,302	4,15,867
A. Expenditure, A, Conservancy and Works.		
I. Timber and other produce removed from the forests, &c.		
(*a*). Timber...	33,471	27,429
(*b*). Firewood and charcoal ...	3,07,248	1,44,390
(*e*). Grass and other minor produce...	670	569
II. Timber and other produce removed from the forests by consumers, &c. ...	12	9
VI. Live stock, stores, tools and plant ...	1,018	504
VII. Communication and buildings	407	760
VIII. Demarcation, improvement and extension of forests...	11,921	11,195
IX. Miscellaneous	238	1,028
Total A, Conservancy ...	3,54,985	1,85,884
B.—Establishment.		
I. Salaries	90,363	80,452
II. Travelling Allowances	16,593	15,427
III. Contingencies	4,186	4,348
Total B ...	1,11,142	1,00,227
Grand Total ...	4,66,127	2,86,111

There is a falling off of Rs. 2,16,435 in gross, and Rs. 46,419 in net receipts, as compared with last year. It will be seen, however, that had the railway taken as much wood as it does in ordinary years the results this year, both gross and net, would have far exceeded those of any other year. The loss of revenue, due to the railway taking so little wood, is Rs. 2,43,057 and Rs. 74,470 net; under these circumstances it is a matter for congratulation that the better receipts under other heads have so nearly made up for the heavy loss on railway fuel.

General Remarks.

77. A Conference was held at Sukkur on 7th November, under the presidency of the Commissioner in Sind, at which officers of the North-Western Railway and myself were present, to take into consideration the question of the wood-supply for locomotive fuel to the railway. The Bombay Government are of opinion that the State railway does not pay enough for the wood, whereas on the other hand the railway authorities not only consider the wood too dear, but are dissatisfied with the arrangements under which it is delivered to them. They wish the Forest Department to maintain a very large stock of dry wood at each fueling station at its own risk and deliver the wood direct into engines, instead of the present arrangements by which periodical supplies are indented for by the railway and taken over when ready for delivery in bulk. The Conference lasted late into the afternoon and much correspondence was carried on for months after it was over. The net results are, that the railway have agreed to take wood for another year, that is, up to 31st March 1890, at the same rates and on the same conditions as heretofore, but having waived the restriction on proportion of babul wood in the total quantity of fuel supplied, they are to get a proportionate reduction in the price at stations where the extended use of babul fuel cheapens cost of delivery; so that the net profit to the Forest Department on the fuel supplied may remain the same. From the 1st April 1890, the wood supplied to the railway is to be paid for at the actual cost of delivery plus Rs. 12 per stack royalty. This arrangement has been accepted by the Director, North-Western Railway, under protest pending a reference to the Government of India.

78. I spent some time during the tour season in making an inspection of the fuel reserves taken up since 1878, in the Shikarpur and Jacobabad Districts. The condition of most of these reserves, for want of water, is very bad. They lie within the area protected by the Kashmor Bund, and all except one, on land that should be capable of irrigation by the Begari Canal and its branches, but owing to want of a sufficient quantity of water in the canals very little can be done to improve the condition of these reserves. Where the land is saline or has a sub-stratum of sand all tree growth has died out and it is quite bare and unproductive of wood or fodder and will remain so till the canal power of the district is increased. Where the land is sweet and good, and on which kandi and tree-tamarisk jungle exists, matters are more satisfactory. Both these kinds of trees send their roots to a great depth in the soil, and when once fairly established, are independent of surface irrigation. Jungle of this kind, during the present generation at any rate, can be worked for fuel fairly satisfactorily, as the trees cut down coppice well notwithstanding that they get no water beyond the little rain that falls in the district, and there is no difficulty in securing natural reproduction by simply closing the land to grazing by goats.

79. The condition of the river side forests in Upper Sind is also unsatisfactory from the damage done by forest fires in retarding reproduction and the restoration of tree growth on areas that have been worked out.

80. The river side forests in Central and Lower Sind I found in excellent condition, especially in the Hyderabad Division. Reproduction on areas that had been worked over was very satisfactory; and the general protection and absence of damage remarkable.

81. The records and accounts of all the Divisional Forest Officers were examined and found in a satisfactory condition, and I have much pleasure in reporting that the officers themselves have carried on their duties with most praiseworthy zeal and energy. Among the Range Forest Officers, I may give the following as having shown conspicuous zeal and ability in their duties:—

Forest Rangers ...	...	Peribdas. Kishinsing (since dead.) Rambux. Gobindbux. Parmanand.
Foresters	...	Wadhumal. Roopchand.

82. Mr. Parmanand, Accountant, and Mr. Lilaram, Head Clerk in the Conservator's Office, deserve to be mentioned for zealous and intelligent devotion to their work.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 49.

ANNUAL FORM

FOREST DEPARTMENT, BOMBAY,

Area of Reserved

Division or Range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1888.		Added during the year.
			Acres.	Equivalent in square miles.	Acres.
Sukkur ...	Shikarpur.	Raoti	8,029	13	...
		Jamshero	5,316	8	258
		Daresh	3,025	5	...
		Ubauro	3,150	5	...
		Mirpur	7,251	11	...
		Rahrarki...	1,654	3	..
		Reti	2,388	4	...
		Rangu	972	2	.
		Narli	1,376	2	...
		Sarhad	3,529	6	...
		Islam	2,064	3	...
		Jehanpur	4,340	7	...
		Bahab	8,585	13	...
		Budh	1,217	2	...
		Sadhuja	13,742	21	3,000
		Shahpur	9,915	15	2,500
		Panwhari	637	1	.
		Hussenbeli	3,407	5	...
		Azizpur	880	1	..
		Ding	1,518	2	.
		Syedpur	8,216	13	..
		Rohri	22,551	35	...
		Sultanpur	1,753	3	
		Saliani...	5,014	8	..
		Ghotki	4,200	7	
		Adilpur	12,674	20	...
		Walu Mahar	2,648	4	.
		Samowah	2,252	4	...
		Vasir	1,417	2	...
		Jarwar	2,839	4	...
		Abad	5,729	9	300
		Kadirdini Bindi	2,306	4	...
		Khia Bindi	3,318	5	300
		Shah	16,183	25	...
		Bindi Dhareja	7,504	12	600
		Kadrapur	2,564	4	...
		Mohro Mari	11,857	19	..
		Andaldal	12,643	20	...
		Bagarji	14,420	23	...
		Raiswah	905	1	...
		Lakhi	3,614	6	.
		Ghari Halim	2,096	3	
		Kot Sultan	17,342	27	...
	Upper Sind Frontier.	Abad	1,127	2	..
		Mehrabpur	1,457	2	...
		Dilwarpur	1,439	2	...
		Milkiat Sircar	910	1	...
		Bakapur	8,359	13	29
		Dilmurad	1,055	2	...
		Zangipur	5,359	8	40
		Sarki	3,706	6	
		Beluchabad	1,160	2	
		Korar	887	1	..
		Mirpur	...	..	6,978
		Karampur	...	...	6,960
		Jangan	...	...	2,291
		Total Sukkur Division...	2,72,439	426	22,356
Nushahro	Shikarpur.	Dosu	4,333	7	400
		Keti Ubhuro	5,575	9	.
		Kanuri	4,030	6	...
		Sharifpur	1,027	2	
		Bahman	1,547	2	
		Naoabad...	2,205	3	..
		Phati Bilawal	711	1	..
		Amroti	11,684	18	..
		Muso	5,930	9	..
		Kasimshah	2,107	3	.
		Nari	1,522	2	
		Magsi	1,383	2	
		Dangar	3,685	6	.
		Soi	5,108	8	.
		Budo Dero	1,555	2	..
		Ghanghorko	5,849	9	.
		Gaji Dero	4,333	7	
		Garhi Yasin	...	..	25,328
		Carried over...	62,584	96	25,728

Conservator's Office,
Hyderabad, 10th September 1889.

...	8,029	13		
150	5,424	8		Gained and lost by action of the river.
...	3,025	5		
...	3,150	5		
...	7,251	11		
...	1,654	3		
...	2,388	4		
...	972	2		
...	1,376	2		
...	3,529	6		
...	2,064	3		
...	4,340	7		
600	7,985	12		Lost by action of the river.
...	1,217	2		
600	16,142	25		Gained and lost by action of the river.
...	12,415	19		Gained by action of the river.
...	637	1		
500	2,907	5		Lost by action of the river.
...	880	1		
...	1,518	2		
...	8,216	13		
...	22,551	35		
...	1,753	3		
...	5,014	8		
...	4,200	7		
...	12,674	20		
...	2,648	4		
...	2,252	4		
...	1,417	2		
...	2,839	4		
150	5,879	9		Gained and lost by action of the river.
...	2,306	4		
...	3,618	6		Gained by action of the river.
150	16,033	25		Lost by ditto. ditto.
200	7,904	12		Gained and lost by ditto.
...	2,564	4		
...	11,857	19		
...	12,643	20		
...	14,420	23		
...	905	1		
...	3,614	6		
...	2,096	3		
...	17,342	27		
...	1,127	2		
...	1,457	2		
...	1,439	2		
...	930	1	2,203 A of 11th April 1888.	
...	8,359	13		
...	1,104	2	5,787 of 27th August 1889.	
...	5,359	8		
...	3,706	6		
...	1,100	2		
...	837	1		
...	6,978	11	}	
...	6,060	9	} 5,787 of 27th August 1838.	
...	2,291	4	}	
2,350	2,92,445	453		
100	4,633	7		Gained and lost by action of the river.
...	5,575	9		
100	3,930	6		Lost by action of the river.
...	1,027	2		
...	1,547	2		
...	2,205	3		
...	711	1		
...	11,684	18		
...	5,930	9		
...	2,107	3		
...	1,522	2		
...	1,383	2		
...	3,635	6		
...	5,103	8		
...	1,555	2		
...	5,849	9		
...	4,333	7		
...	25,328	40	3,707 of 6th June 1838.	
200	88,112	136		

		Brought forward...	62,584	95	25,728
Nanshahro—*continued*	Hyderabad.	Bhour	8,539	14	2 00
		Muhbatdero	7,500	12	
		Samtia	3,300	5	50
		Kamaldero	1,365	2	
		Bhorti	7,200	11	200
		Dalipota...	867	1	
		Khairodero	13,523	21	
		Lalia	4,162	6	
	Karachi.	Karampur	2,304	3	
		Baghban	1,947	3	
		Bhan	1,138	2	
		Phaka	2,207	3	
		Kalubori	748	1	
		Pipri	925	1	
		Total Naushahro Division...	1,19,509	184	26,178
Hyderabad	Hyderabad.	Lakhat	6,430	10	200
		Nasri	2,556	4	100
		Mad	2,692	4	
		Mehrabpur	4,088	6	50
		Mari	16,303	25	100
		Pai	5,139	8	
		Keti Jurio	2,025	3	
		Rano	1,627	2	100
		Nurketi	3,413	5	
		Kacho Nurketi	3,641	6	
		Bhanote...	811	1	
		Khanote	8,966	14	
		Khebrani	761	1	
		Sekhat	2,067	3	
		Jakhri	1,926	3	
		Matiari	5,354	8	
		Ghali	4,041	6	
		Miani	4,917	7	
		Kathri	756	1	
		Gundi	2,150	3	
		Muhammad Khan	181	...	...
		Jam Sharo	292	..	
		Shah Makai	411	1	
		Keti Mehrani	5,503	9	
	Karachi.	Gidarji	855	1	..
		Butto	7,908	12	1,200
		Manjhand	1,539	2	250
		Unarpur...	10,779	17	200
		Ghag	1,296	2	.
		Karokho...	1,701	3	..
		Total Hyderabad Division...	1,10,153	169	2,300
Jerruck.	Karachi.	Viran	8,362	13	.
		Sonda	2,114	3	.
		Hilaya	2,948	5	...
		Lalang	4,801	8	..
		Shah Lonko	1,690	3	
		Garko	4,079	6	.
		Malir	24	...	
		Kacho Abbahar	...	.	3,000
		Do. Surjani	...	...	3,410
		Do. Kot Almo	...	...	2,355
		Peuah	6,469	10	.
		Susati	89	...	5
		Khir-ar	1,380	2	..
		Huderani	5,511	9	..
		Surjani	1,364	2	...
		Ganj	1,450	2	20
		Hazari	2,483	4	
		Makhulo...	496	1	.
		Laikpur	7,406	11	..
		Khadi	4,000	6	...
		Phatah	1,...	1	..
		Mulchand	5,454	9	.
	Hyderabad.	Husri	420	1	...
		Khatro	416	1	.
		Khathai	2,975	7	
		Katiar	952	1	
		Khirdahi	290	...	
		Tikhur	1,709	3	..
		Khokhar...	1,556	2	..
		Budka Takar	975	1	.
		Total Jerruck Division...	69,569	111	8,815

No. 49.

SIND CIRCLE.

Forests, 1888-89.

Excluded or transferred to other heads.	Area on 1st March 1889.		No. and date of Notification of addition or transfer.	REMARKS.
Acres.	Acres.	Equivalent in square miles.		
200	88,112	136		
500	8,539	13		Gained and lost by action of the river.
50	7,450	12		Lost by action of the river.
10	3,340	5		Gained and lost by action of the river.
...	1,365	2		
200	7,200	11		Ditto.
...	867	1		
150	13,373	21		Lost by action of the river.
300	4,162	7		Ditto. ditto.
100	2,804	4		Ditto. ditto.
...	1,947	3		
...	1,138	2		
...	2,207	3		
...	748	1		
...	925	1		
1,510	1,44,177	222		
...	6,630	10		Gained by action of the river.
...	2,656	4		Ditto. ditto.
...	2,692	4		
...	4,138	6		Ditto. ditto.
...	16,403	26		Ditto. ditto.
...	5,130	8		
50	1,975	3		Lost by action of the river.
...	1,727	3		Gained ditto. ditto.
...	3,418	5		
3,641	...	...		Lost ditto. ditto.
...	841	1		
320	8,646	14		Lost by action of the river.
...	760	1		
...	2,067	3		
...	1,926	3		
...	5,354	8		
...	4,041	6		
...	4,917	8		
...	756	1		
...	2,150	3		
...	181	...		
...	292	...		
...	411	1		
...	5,503	9		
...	855	1		
25	9,183	14		Gained and lost by action of the river.
10	1,779	3		Ditto. ditto. ditto.
15	10,964	17		Ditto. ditto. ditto.
...	1,296	2		
...	1,701	3		
4,061	1,08,392	167		
100	8,262	13		Lost by action of the river.
...	2,114	3		
...	2,948	5		
...	4,801	8		
...	1,690	3		
...	4,079	6		
...	24	...		
...	3,000	5		
...	3,410	5	2309 of 17th April 1888.	
...	2,335	4		
...	6,169	10		
...	139	...		
...	1,380	2		Gained by action of the river.
...	5,511	9		
...	1,364	2		
40	1,473	2		Gained and lost by action of the river.
...	2,483	4		
...	496	1		
...	7,406	12		
...	4,000	6		
...	413	1		
...	5,454	9		
...	420	1		
...	416	1		
...	2,975	5		
...	952	1		
...	290	...		
...	1,709	3		
...	1,556	2		
...	975	2		
140	78,244	125		

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 49 A.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE.

Area of Protected Forests, 1888-89

Division or range.	Civil District or Territory.	Name of Forest.	Area on 1st April 1888.		Added during the year.	Excluded or transferred to other heads.	Area on 31st March 1889.		No. and date of Notification of addition or transfer.	Remarks.
			Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.		
Sukkur	Upper Sind Frontier	Macaulay	183	...	...	...	183	...		
		Dickinson	585	1	...	...	585	1		
		Total...	768	1	...	...	768	1		

Hyderabad,
10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 50.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE, PROSECUTIONS FOR BREACHES OF FOREST RULES DURING 1888-89.

Forest Division and Civil District.	Cases pending from 1887-88.	NEW CASES OF THE YEAR.					Total cases.	DISPOSED OF DURING THE YEAR.						Cases pending at close of year.
		Injury to forest by fire.	Unauthorised felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Upper Sind Frontier District.														
Sukkur Division	1	...	64	...	...	64	65	36	50	25	45	61	95	4
Shikarpur District.														
Sukkur Division	3	...	12	5	3	20	23	10	23	9	51	19	74	4
Naushahro „	...	...	4	1	...	5	5	5	10	...	...	5	10	...
Hyderabad District.														
Naushahro Division	...	...	3	...	...	3	3	2	3	1	2	3	5	...
Hyderabad „	...	...	...	...	4	4	4	3	6	1	4	4	10	...
Karachi District.														
Naushahro Division	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad „	...	...	6	...	...	6	6	5	10	1	1	6	11	...
Jerruck „	...	...	1	2	...	3	3	2	9	1	8	3	17	...
Total ...	4	...	90	8	7	105	109	63	111	38	111	101	222	8

Hyderabad,
10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 51.

FOREST DEPARTMENT, SIND CIRCLE.

Area of Forest tracts protected from fire during the dry season of 1888, to accompany report for the year 1888-89.

Division.	Forest tracts.	Year in which commenced.	Area actually protected up to 15th June 1888.	During dry season of 1889.			Cost during the season.	Remarks.
				Area attempted to be protected.	Failure.	Area actually protected.		
Sukkur	Mirpur	Not known	43,202	43,202	180	43,022		
	Ghotki		26,030	26,030	5	26,025		
	Sadhuja		81,235	81,235	3,034	78,201		
	Abad		50,161	50,161	165	49,996		
	Sukkur		27,063	27,063	558	26,505		
	Shikarpur	1886-87	23,957	23,957	2	23,955		
	Jacobabad	1885-86	14,080	14,080	2	14,078		
	Thul		27,485	27,485	.....	27,485		
Naushahro	Naushahro Abro	1888-89	25	25	25	.....		
	Bakrani	Not known	18,103	18,103	247	17,856		
	Tigir		.....	.....	.....	.....		
	Kandiaro		20,446	20,446	1,681	18,765		
	Sehwan		310	310	125	185		
Hyderabad	Rano	Do.	10,720	10,720	401	10,319		
	Miani		3,433	3,433	150	3,283		
	Hyderabad		.....	.....	.....	.....		
	Kotri		2,000	2,000	.....	2,000		
	Unarpur		13,050	13,050	462	12,588		
Jerruck	Viran	Do.	3,083	3,083	15	3,068		
	Shahbander		8,488	8,488	83	8,405		
	Mulchand		6,020	6,020	140	5,880		
	Katiar		1,603	1,603	.....	1,603		
		Total.....	3,80,494	3,80,494	7,275	3,73,219		

Conservator's Office,
Hyderabad, 10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 52.

AREA OF PLANTATIONS, 1888-89.

ANNUAL FORM No. 52.

FOREST DEPARTMENT, SIND CIRCLE. AREA OF PLANTATIONS, 1888-89.

Divisions.	Name of Plantation.	Area in Acres				Receipts of the year.	Charges of the year.	Remarks.
		On 1st April 1888.	Added during the year.	Excluded during the year.	Area on 31st March 1889.			
	Regular Plantations.							
Sukkur ...	Aliwahan garden	20	...	...	20	8	84	
	Rahuja Nursery	10	...	...	10	342	505	
	Sadhuja Plantation	25	...	...	25	...	84	
	Shah do.	7	...	...	7	...	84	
Hyderabad ...	Devi-Devi Plantation	13	...	...	13	487	196	
	Bamboo do	13	...	...	13	...	96	
	Miani Bungalow, Mango and Monument Gardens ...	12	...	...	12	239	628	
Jerruck ...	Malir Nursery	24	...	...	24	20	191	
	Sonda do.	5	...	...	5	213	167	
	Total ...	129	...	...	129	1,309	1,945	
	Cultural Operation.							
Sukkur ...	Abad	10	25	...	35	...	...	
	Bindi Dhareja	33	81	...	114	...	84	
	Shah	...	8	...	8	...	...	
	Mohre Mari	...	45	...	45	...	...	
	Ding	25	...	25	...	...	...	25 acres were opened to grazing, the growth attained such dimension as not to require any protection.
	Rohri	25	20	...	45	...	...	
	Syedpur	4	4	...	8	...	...	
	Changin	2	...	...	2	...	...	
	Saliani	2	18	...	20	...	...	
	Sultanpur	...	10	...	10	...	...	
	Azizpur	...	20	...	20	...	...	
	Adilpur	15	20	...	35	...	58	
	Samowah	7	15	...	22	...	...	
	Dickinson	...	3	...	3	...	...	
	Total ...	123	269	25	367	...	142	
Naushahro ...	Bhour	24	...	...	24	...	...	
	Mohbat Jero	50	600	50	600	...	...	50 acres were opened to grazing.
	Bhorti	290	...	290	...	...	...	290 Do. do.
	Dalipota	...	125	...	125	...	...	
	Karampur	25	...	...	25	...	...	
	Phuka	...	145	...	145	...	5	

	Pipri	...		140	...		140	...		5				
	Sharifpur		45	...	...		45	...	...					
	Naobad		16	...		16	...	...	...		16	Do.	do	
	Amrote	...		60	...		60	...		7				
	Gajidero	...		10	...		10	...		6				
	Bhan	...		68	...		68	...		4				
	Total ...	450		1,348	356		1,442	...		27				
Hyderabad...	Mari	7		...	...		7	...	...					
	Nurketi	320		20	...		340	...	...					
	Mad...	166		...	...		166	...	...					
	Matiari	320		...	...		320	...	...					
	Miani	640		50	...		690	...	...					
	Mahamad khan	181		...	...		181	...	...					
	Shah Makai	43		...	...		43	...	...					
	Jamshoro	23		...	...		23	...	...					
	Butto	1,440		35	...		1,475	...	...					
	Manjhand	108		...	...		108	...	...					
	Unarpur	640		25	...		665	...	...					
	Total ...	3,888		130	...		4,018	...	...					
Jerruck ...	Mulchand	229		3	...		232	...	...					
	Khadi	2,006		...	2,006		...	...	...		2,006	Do.	do.	
	Penah	13		...	...		13	...	...					
	Laikpur	117		160	...		277	...	...					
	Viran	785		...	...		785	...	...					
	Garko	561		37	...		598	...	...					
	Shah Lonko	131		59	...		190	...	...					
	Sonda	79		9	...		88	...	...					
	Hilaya	197		...	...		197	...	...					
	Tikhar	24		...	...		24	...	...					
	Khathar	65		2	...		67	...	...					
	Katiar	24		...	...		24	...	...					
	Budka Takar	82		...	...		82	...	...					
	Khatro	250		...	250		...	....	...		250	Do.	do.	
	Lalang	15		...	...		15	...	...					
	Total ...	4,578		270	2,256		2,592	...	...					

Conservator's Office,
Hyderabad, 10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 54.

FOREST DEPARTMENT, SIND CIRCLE, OUTTURN OF TIMBER AND FIREWOOD DURING THE YEAR 1888-89.

Division.	Description of Material.	Outturn in Cubic feet.								Remarks.
		Selection fellings.	Clearance.	Thinnings.	Total.	Removed by				
						Government Agency.	Purchasers.	Free grants.	Right holders.	
Sukkur	Babul logs	2,725	...	...	2,725	1,533	854	13	...	
	Bahan logs	6,992	...	...	6,992	3,314	3,061	148	...	
	Tali logs	95	...	...	95	797	95	...	...	797 C. ft. removed out of last year's outturn.
	Ber logs	...	...	...	...	18	...	...	...	18 Do. do.
	Bahan dasas	1,411	...	...	1,411	908	25	...	...	
	Babul dasas	225	...	...	225	29	...	...	...	
	Serch logs	...	...	...	...	122	...	...	...	122 Do. do.
	Babul posts	221	...	...	221	45	12	...	...	
	Bahan posts	5,256	...	...	5,256	4,249	95	24	...	
	Bahan rafters	16,543	...	...	16,543	11,966	2,194	325	...	
	Babul cart axles	...	167	...	167	372	3	...	...	208 Do. do.
	Jhau rafters	...	56,087	...	56,087	1,065	51,983	3,039	...	
	Tali pieces	11	...	...	11	11	...	...	...	
	Kandi logs	852	...	...	852	...	659	193	...	
	Jhau, Asri and Lai logs	2,589	...	...	2,589	...	2,399	190	...	
	Kandi rafters	327	...	...	327	...	327	...	...	
	Props	2,128	...	...	2,128	...	2,092	36	...	
	Jhau posts	75	...	..	75	...	75	...	...	
	Kirrir rafters	...	820	...	820	..	820	..	...	
	Firewood	...	40,11,545	...	40,11,545	12,75,817	26,67,451	338	...	
	Locomotive fuel...	...	10,36,481	...	10,36,481	7,91,881	59,090	...	...	
	Charcoal	...	9,752	...	9,752	...	9,752	...	...	
	Total ...	39,450	51,14,852	..	51,54,302	20,92,127	28,00,987	4,306	...	
Naushahro	Babul logs	6,233	...	...	6,233	603	1,946	3,539	...	
	Bahan logs	380	...	...	380	342	38	...	...	
	Lai logs	10	...	...	10	...	10	...	...	
	Ber logs	2	...	...	2	...	2	...	...	
	Kandi logs	704	...	...	704	477	227	...	...	
	Kandi pieces	7	...	...	7	...	7	...	...	
	Babul posts	110	...	...	110	28	...	82	...	
	Bahan posts	1,122	...	...	1,122	486	124	...	...	
	Bahan rafters	3,923	...	...	3,923	8,585	200	...	...	4,862 Do.
	Thin Bahan rafters	7,725	...	...	7,725	7,625	...	...	...	
	Kirrir rafters	...	2,263	...	2,263	205	2,058	...	...	

	Jhau rafters	...	7,424	...	7,424	2,507	1,824	3,910	...	817	Do.	do.
	Jhau bairs	...	2	...	2	...	2	...	...			
	Firewood	...	4,67,066	...	4,67,066	87,555	4,05,641	...	...	26,130	Do.	do.
	Locomotive fuel...	...	4,98,247	...	4,98,247	4,35,947	...	...	...			
	Charcoal.	...	20,498	...	20,498	19,836	662	...	...			
	Total ...	20,216	9,95,500	...	10,15,716	5,64,196	4,12,741	7,531	...			
Hyderabad... ...	Babul logs	10,478	...	...	10,478	7,008	5,895	483	...	2,908	Do.	do.
	Babul bolsters	472	...	...	472	581	...	...	...	109	Do.	do
	Babul sleepers	15,039	...	..	15,039	14,007	...	...	...			
	Babul slabs	125	...	...	125	361	7	...	...	243	Do.	do.
	Babul rafters	...	...	...	...	3	...	...	...	3	Do.	do.
	Babul planks	...	...	...	...	32	...	...	...	32	Do.	do.
	Bahan logs	6	...	...	6	...	6	...	...			
	Bahan dasas	529	...	...	529	529	...	...	...			
	Bahan posts	5,751	...	...	5,751	3,504	2,244	...	...			
	Bahan rafters	90,119	...	...	90,119	80,750	5,036	...	...			
	Jhau rafters	5,440	...	...	5,440	3,250	2,040	150	...			
	Jhau posts	...	...	...	...	46	...	...	...	46	Do.	do.
	Kirrir rafters	634	...	...	634	80	634	...	...	80	Do.	do.
	Jhau bairs	37	...	...	37	...	36	1	...			
	Kandi logs	70	...	...	70	...	31	39	...			
	Babul posts	423	...	...	423	...	423	...	...			
	Firewood	...	15,56,887	...	15,56,887	14,10,932	3,98,095	...	...	2,52,140	Do.	do.
	Charcoal	...	4.689	...	4,689	17,829	...	...	...	13,140	Do.	do.
	Locomotive fuel...	...	5,44,622	...	5,44,622	4,83,932	...	...	...			
	Total ...	1,29,123	21,06,198	...	22,35,321	20,22,844	4,14,447	673	...			
Jerruck	Babul logs	10,338	...	...	10,338	7,607	2,171	243	...			
	Babul posts	...	548	...	548	840	548	...	...	840	Do.	do.
	Jhau posts	...	16	...	16	168	16	...	...	168	Do.	do.
	Jhau rafters	...	438	...	438	6	438	...	...	6	Do.	do.
	Babul bolsters	...	..	...	...	346	...	...	...	346	Do.	do.
	Bahan rafters	...	250	...	250	100	250	...	...	100	Do.	do.
	Bahan thin rafters	...	193	...	193	350	193	...	...	350	Do.	do.
	Kandi logs	...	...	...	...	136	...	...	...	136	Do.	do.
	Babul slabs	...	...	...	..	350	...	...	...	350	Do.	do.
	Jhau bairs	...	1	...	1	...	1	...	...			
	Kirrir rafters	...	500	...	500	...	...	...	...			
	Firewood	...	10,21,633	...	10,21,633	10,95,818	28,174	...	...	1,02,359	Do.	do.
	Locomotive fuel...	...	93,480	...	93,480	36,228	...	...	...			
	Charcoal	...	1,48,509	...	1,48,509	1,43,735	...	...	...			
	Total ...	10,338	12,65,568	...	12,75,906	12,86,184	31,791	243	...			

Conservator's Office,
Hyderabad, 10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 55.

FOREST DEPARTMENT, SIND CIRCLE, OUTTURN OF MINOR FOREST PRODUCE.

Division.	Description of produce.	Produce removed or utilized.										Remarks.
		By Government agency.		By purchasers.		By Free grant.		By right holders.		Total.		
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
Sukkur	Kanh grass	...	...	701	44	73	5	...	...	774	49	
	Reed grass	...	...	197	12	...	...	...	...	197	12	
	Munj reed	...	...	Contract.	669	...	...	...	...	...	669	
	Jhau brushwood	...	...	3,737	239	196	12	...	...	3,933	251	
	Babul bark, Mds.	...	...	33	9	...	...	...	...	33	9	
	Babul, Kandi and Bahan pods	...	...	Contract.	444	...	...	...	...	...	444	
	Compensation	...	...	...	11	...	...	...	...	...	11	
	Grass bundles	...	...	2,820	176	...	...	...	...	2,820	176	
	Branches of trees	...	...	...	44	...	...	...	...	...	44	
	Do. do. for hedges	...	...	C. ft. 1,000	7	...	...	...	...	C. ft. 1,000	7	
	Fruit, &c.	...	350	...	20	...	...	...	...	...	370	
	Tali, Nim and Sereh seedlings	523	145	...	...	...	...	...	...	523	145	
	Grazing fees	...	...	...	17,656	...	...	...	...	...	17,656	
	Total.....	523	495	8,488	19,331	269	17	...	...	9,280	19,843	
Naushahro	Babul pods	...	...	Contract.	3,518	...	...	...	...	...	3,518	
	Sur grass	...	...	Do.	487	...	...	...	...	...	487	
	Do.	...	...	120	10	...	...	...	...	120	10	
	Ber fruit	...	...	Contract.	14	...	...	...	...	...	14	
	Branches of trees	...	...	87	42	...	...	...	...	87	42	
	Babul pegs	...	...	2,500	25	...	...	...	...	2,500	25	
	Babul bark	13	2	39	5	...	...	...	...	52	7	
	Jhau brushwood	340	27	116	14	100	6	...	...	556	47	
	Kanh grass	96	9	105	6	500	31	...	...	701	46	
	Babul seed	1	1	...	...	...	...	...	...	1	1	
	Fruit (Lotus)	...	...	Contract.	5	...	...	...	...	Contract.	5	
	Grazing fees	...	...	...	8,875	...	...	...	...	...	8,875	
	Total.....	450	39	2,967	13,071	600	37	...	...	4,017	13,077	

Hyderabad	Babul seed	...	...	...	...	...	...	...	...	...	...
	Babul bark	598	598	5,170	1,228	...	...	...	...	5,768	1,826
	Tooth brushes	10	15	380	178	...	...	...	...	390	193
	Brushwood	...	...	2,107	143	...	...	...	...	2,107	143
	Kanh and Sur grass	...	...	952	93	46	3	...	...	998	96
	Reed	...	...	284	10	...	...	...	...	284	10
	Compensation	...	...	...	106	...	...	...	...	...	106
	Babul pods	...	...	Contract.	9,256	...	...	...	...	Contract.	9,256
	Lac	...	...	25	51	...	...	...	...	25	51
	Do.	...	...	Contract.	778	...	...	...	...	Contract.	778
	"Kinro"	...	...	Do.	25	...	...	...	...	„	25
	Mangoes	...	...	Do.	239	...	...	...	...	„	239
	Lotus	...	...	Do.	36	...	...	...	...	„	36
	Honey	...	...	Do.	6	...	...	...	...	„	6
	Kamo	...	...	42	3	...	...	...	...	42	3
	Grazing fees	...	...	...	16,379	...	...	...	...	...	16,379
	Total	608	613	8,960	28,531	46	3	...	...	9,614	29,147
Jerruck	Babul seed	2	2	...	...	...	...	...	...	2	2
	Jhau brushwood	...	...	80	5	...	...	...	...	80	5
	Kanh grass	...	...	64	4	...	...	...	...	64	4
	Kamo	...	...	48	3	...	...	...	...	48	3
	Reed grass	...	...	208	13	...	...	...	...	208	13
	Potash	...	...	280	70	...	...	...	...	280	70
	Fruit	Contract.	...	Contract.	240	...	...	...	...	Contract.	240
	Babul bark, Mds.	...	...	225	23	...	...	...	...	225	23
	Manure, Mds.	...	...	1,500	23	...	...	...	...	1,500	23
	Babul pods	...	...	Contract.	3,630	...	...	...	...	Contract.	3,630
	Jhau Bairs	...	...	1	1	...	...	...	...	1	1
	Grazing fees	...	...	...	14,270	...	...	...	...	...	14,270
	Total	2	2	2,406	18,282	...	...	...	...	2,408	18,284

Conservator's Office,
Hyderabad, 10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 56.

FOREST DEPARTMENT, SIND CIRCLE.

Account of Timber and other Produce cut or collected by Government agency and brought to Sale Depôts or sold locally during the Year 1888-89.

	Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
	Balance at the commencement of the year.				
	Sale Depôts.				
Sukkur Division.	Babul logs	644	4,778		
	Bahan logs	424	3,380		
	Tali logs	125	829		
	Ber logs	1	18		
	Bahan dasas	139	451		
	Bahan posts	10,437	...		
	Bahan rafters	2,055	...		
	Babul cart axles	662	...		
	Sereh logs	11	122		
				14,498	9,578
	Forest Depôts.				
	Bahan rafters	20	...		
				20	...
	Sale Depôts.				
Naushahro Division.	Babul logs	20	...		
	Babul sleepers	28	...		
	Bahan posts	580	...		
	Bahan rafters	13,415	...		
	Jhau rafters	1,900	...		
				15,943	...
	Forest Depôts.				
	Babul logs	20	...		
				20	...

Particulars.	No. or quantity.	Cubic feet.	Total of each head. No. or quantity.	Total of each head. Cubic feet.
TIMBER.				
Removed by Purchasers from Depôts.				
Babul logs	1,359	14,730		
Do.	21	...		
Bahan logs	391	3,267		
Tali logs ...	119	797		
Sereh logs	11	122		
Ber logs ...	1	18		
Babul bolsters	182	860		
Babul planks	52	...		
Bahan dasas	1,352	149		
Jhau posts	345	...		
Babul sleepers	4,002	...		
Babul cart axles	744	...		
Babul posts	1,429	...		
Bahan posts	13,069	...		
Bahan rafters	1,96,616	...		
Babul rafters	6	...		
Jhau rafters	10,276	...		
Kirir rafters	1,160	...		
Babul slabs	700	...		
Tali pieces	21	...		
			2,31,856	19,943
Sold Locally.				
Babul logs	488	1,964		
Do.	3	...		

			Sale Depôts.						
Hyderabad Division.	Babul logs	...	...	...	...	417	5,934		
	Do.	...	...	...	...	1	...		
	Kandi logs	...	...	...	...	34	...		
	Babul planks	...	...	...	...	52	...		
	Babul bolsters	...	...	...	...	193	911		
	Babul sleepers	...	...	...	...	1	...		
	Babul outer slabs		...	...	...	708	...		
	Jhau posts	...	...	...	...	74	...		
	Bahan posts	...	...	...	...	1,578	...		
	Bahan rafters	...	...	...	...	43,000	...		
	Kirir rafters	...	...	...	...	161	...		
	Babul rafters	...	...	..	...	6	...		
	Kirir knees	...	..	...	...	50	...		
								46,275	6,845
			Forest Depôts.						
	Babul logs	...	...	...	...	11	...		
	Babul sleepers	...	...	...	...	4	...		
	Babul outer slabs		...	...	...	22	...		
								37	...
			Sale Depôts.						
Jerruck Division.	Babul logs	...	...	...	..	21	229		
	Babul posts	...	...	...	...	1,356	...		
	Jhau posts	...	...	...	...	271	...		
	Jhau rafters	...	...	...	...	13	...		
								1,661	229
			Forest Depôts.						
	Babul logs	...	...	...	...	303	3,802		
	Babul outer slabs		...	...	...	700	...		
								1,003	3,802
Sukkur Division.	Bahan logs	...	...	...	...	91	389		
	Kandi logs	...	...	...	...	454	477		
	Babul posts	...	...	...	...	45	...		
	Bahan posts	...	...	...	...	221	...		
	Bahan rafters	...	...	...	...	6,886	...		
	Bahan thin rafters	...	...	...	...	15,250	...		
	Jhau rafters	...	...	...	...	3,380	...		
	Babul slabs	...	...	...	...	722	...		
	Kirir rafters	...	...	...	...	410	...		
								27,950	2,830
			Converted in Sale Depôts.						
	Kandi logs	...	...	..	...	34	...		
								34	...
			Used by Department.						
	Babul logs	...	...	...	...	1	11		
	Bahan logs	...	...	...	...	2	17		
	Bahan rafters	...	...	...	...	75	...		
								78	28
			BALANCE AT CLOSE OF THE YEAR.						
			Sale Depôts.						
	Tali logs...	...	...	..	...	6	32		
	Babul logs	...	...	...	...	726	5,092		
	Bahan logs	...	...	...	...	418	3,832		
	Bahan dasas	...	...	...	...	328	1,125		
	Bahan posts	...	...	...	...	11,869	...		
	Bahan rafters	...	...	...	...	6,097	...		
	Babul cart axles		...	...	...	146	...		
	Babul posts	...	...	...	...	254	...		
								19,844	10,
			Forest Depôts.						
	Bahan rafters	...	...	..	...	20	...		
	Babul posts	...	...	...	...	10	...		
								30	

Received from Forests in Sale Depôts.

Babul logs	1,247	12,497		
Bahan logs	387	3,736		
Babul bolsters	100	472		
Bahan dasas	1,541	823		
Babul sleepers	4,297	...		
Babul cart axles	228	...		
Babul posts	327	...		
Bahan posts	15,331	...		
Bahan rafters	1,98,844	...		
Babul logs	2	...		
Jhau rafters	8,630	...		
Kirir rafters	1,000	...		
Babul slabs	78	...		
Tali pieces	21	...	2,32,033	17,528

Received in Forest Depôts.

Babul logs	512	2,121		
Bahan logs	91	389		
Kandi logs	454	477		
Babul posts	55	...		
Bahan posts	221	...		
Bahan rafters	7,016	...		
Kirir rafters	410	...		
Bahan thin rafters	15,250	...		
Jhau rafters	3,380	...		
Babul slabs	158	...	27,547	2,987
Total Timber.....	...	...	3,39,037	40,969

Naushahro Division.

Sale Depôts.

Babul sleepers	28	...	
Bahan posts	1,406	...	
Bahan rafters	3,560	...	
Jhau rafters	267	...	
Bahan thin rafters	200	...	5,461

Forest Depôts.

Babul logs	30	165	
Bahan rafters	130	...	160 165

Hyderabad Division.

Sale Depôts.

Babul logs	205	3,051	
Bahan posts	1,582	...	
Bahan rafters	50,766	...	
Kirir rafters	1	...	
Babul slabs	86	...	
Babul logs	2	...	
Babul bolsters	111	523	
Babul sleepers	296	...	
Kirir knees	50	..	53,099 3,574

Forest Depôts.

Babul logs	8	...	
Babul slabs	158	...	
Babul sleepers	4	...	170

FIREWOOD AND CHARCOAL.

Balance at commencement of the Year.

Sukkur Division.	*Sale Depôts.*							
	Firewood	...	...	...	...	49,202	...	
	Locomotive fuel	...	...	...	...	...	3,403	
							49,202	3,403
	Forest Depôts.							
	Firewood	...	...	...	...	15,427	...	
	Locomotive fuel	...	...	...	...	...	90,227	
							15,427	90,227
Naushahro Division.	*Sale Depôts.*							
	Firewood	...	...	...	Mds.	3,309	...	
							3,309	...
	Forest Depôts.							
	Firewood	...	...	...	...	4,970	...	
	Locomotive fuel	...	...	...	...	...	1,63,450	
							4,970	1,63,450
Hyderabad Division.	*Sale Depôts.*							
	Firewood	...	..	...	...	73,334	...	
	Charcoal	...	...	...	...	199	...	
	Locomotive fuel	...	...	...	...	...	1,248	
	Babul seed	...	...	...	...	166	...	
							73,699	1,248
	Forest Depôts.							
	Firewood	...	...	...	...	1,473	...	
	Charcoal	...	...	...	...	2,900	...	
	Locomotive fuel	...	...	...	...	...	5,250	
							4,373	5,250

Jerruck Division.	*Sale Depôts.*							
	Babul logs	...	...	...	...	38	554	
							38	554
	Forest Depôts.							
	Babul logs	...	...	...	...	317	3,794	
							317	3,794
	Total Timber.....					..	...	3,39,037	40,969

FIREWOOD AND CHARCOAL.

Removed by Purchasers from Sale Depôts.

Firewood	...	...	...	...	3,97,956	...
Locomotive fuel	...	...	...	...	...	2,88,376
Charcoal ...	...	...	...	...	920	...
Babul bark	...	...	..	...	598	..
					3,99,474	2,88,376
Forest Depôts.						
Firewood	...	...	...	...	1,33,596	...
Locomotive fuel	...	...	...	...	...	17,03,189
Charcoal ...	..	...	...	...	39,391	...
Jhau brushwood	...	...	...	...	340	...
Tooth brushes	...	...	...	...	10	...
Kanh grass	...	...	...	...	96	...
Babul bark	...	...	...	...	13	...
Babul seed	...	...	...	...	193	...
					1,73,639	17,03,189
Converted into						
Locomotive fuel	...	...	...	...	...	3,000
					..	3,000

Received by conversion in Sale Depôts.												
Firewood...	...	1,280	...	1,280								
Received by conversion in Forest Depôts.												
Firewood...	400	...	400	...								
Grand Total.....	...	...	7,38,461	27,02,138								
					Hyderabad Division.	*Sale Depôts.*						
						Firewood	33,921	...				
						Locomotive fuel	...	60,690				
						Babul seed	55	...				
						Charcoal	179	...				
											34,155	60,690
						Forest Depôts.						
						Firewood	2,398	...				
											2,398	...
					Jerruck Division.	*Sale Depôts.*						
						Firewood	1,875	...				
											1,875	...
						Forest Depôts.						
						Firewood	39,694	...				
						Locomotive fuel	...	1,31,245				
						Charcoal	2,037	...				
						Babul seed	420	...				
											42,151	1,31,245
						Grand Total.....	...	...			7,38,461	27,02,138

Hyderabad,
10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 57.

FOREST DEPARTMENT, SIND CIRCLE.

Abstract showing the value of timber and other produce at Sale Depôts for the year 1888-89.

	Description of timber and other produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		No.	Cubic feet.	Value.	No.	Cublic feet.	Value.	In favor of the year.	Against the year.
Sukkur Division.	*Sale Depôts.*								
	Babul logs	644	4,778	2,389	726	5,092	2,546	...	...
	Bahan logs	424	3,380	1,680	418	3,832	1,916	...	...
	Tali logs	125	829	233	6	32	7	...	...
	Pahan and Babul Dasas	139	451	104	328	1,125	247	...	...
	Babul posts	...	...	...	254	...	81	...	...
	Bahan posts	10,437	...	4,175	11,869	...	4,748	...	...
	Bahan rafters	2,055	...	239	6,097	...	854	...	...
	Babul cart axles	662	...	38	146	...	37	...	...
	Sereh logs	11	122	27	...	...	...	...	...
	Ber logs	1	18	3	...	...	...	...	...
	Total timber...	14,498	9,578	8,888	19,844	10,081	10,436	1,548	...
	Forest Depôts.								
	Bahan rafters	20	...	2	20	...	2	...	...
	Babul posts	...	...	...	10	...	2	...	...
	Total timber...	20	...	2	30	...	4	2	...
	Sale Depôts.								
	Firewood	49,202	...	8,856	58,767	...	10,578	...	...
	Locomotive fuel	...	3,403	174	...	12,145	638	...	...
	Total firewood...	49,202	3,403	9,030	58,767	12,145	11,216	2,186	...
	Forest Depôts.								
	Firewood	15,427	...	2,777	13,402	...	1,608	...	...
	Locomotive fuel	...	90,227	3,338	...	2,46,220	9,110	...	...
	Total firewood...	15,427	90,227	6,115	13,402	2,46,220	10,718	4,603	...
Naushahro Division.	*Sale Depôts.*								
	Babul logs	20	...	2	...	...	...	...	...
	Babul sleepers	28	...	50	28	...	50	...	...
	Bahan posts	580	...	94	1,406	...	228	...	...
	Bahan rafters	13,415	...	1,362	3,560	...	362	...	...
	Bahan thin rafters	...	...	...	200	...	12	...	...
	Jhau rafters	1,900	...	66	267	...	9	...	...
	Total timber...	15,943	...	1,574	5,461	...	661	...	913
	Forest Depôts.								
	Babul logs	20	...	15	30	165	25	...	...
	Bahan rafters	...	...	...	130	...	4	...	...
	Total timber...	20	...	15	160	165	29	14	...
	Sale Depôts.								
	Firewood	3,309	...	596	281	...	51	...	545
	Forest Depôts.								
	Firewood	4,970	...	311	4,127	...	415	...	...
	Locomotive fuel	...	1,63,450	5,230	...	2,25,750	7,716	...	...
	Babul seed	...	...	...	35	...	52	...	...
	Total firewood...	4,970	1,63,450	5,541	4,162	2,25,750	8,183	2,642	...

	Description of timber and other produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		No.	Cubic feet.	Value.	No.	Cubic feet.	Value.	In favor on the year.	Against the year.
Hyderabad Division.	*Sale Depôts.*								
	Babul logs	417	5,934	4,450	205	3,051	1,525	...	...
	Babul logs	1	...	6	2	...	2	...	...
	Bahan posts	1,578	...	631	1,582	...	633	...	...
	Bahan rafters	43,000	...	4,730	50,766	...	5,584	...	...
	Babul sleepers	1	...	3	296	...	888	...	...
	Babul outer slabs	708	...	140	86	...	21	...	...
	Babul planks	52	...	26	...	...	...	...	...
	Jhau posts	74	...	6	...	...	...	...	...
	Babul bolsters	193	911	1,139	111	523	523	...	...
	Babul rafters	6	...	1	...	...	...	...	...
	Kirir knees	50	...	3	50	...	3	...	...
	Kirir rafters	161	...	6	1	...	...	...	...
	Kandi logs	34	...	17	...	...	...	...	...
	Total timber...	46,275	6,845	11,158	53,099	3,574	9,179	1,979	...
	Forest Depôts.								
	Babul logs	11	...	8	8	...	6	...	...
	Babul sleepers	4	...	8	4	...	8	...	...
	Babul outer slabs	22	...	2	158	...	5	...	...
	Total timber...	37	...	18	170	...	19	1	...
	Sale Depôts.								
	Firewood .....Mds...	73,334	...	13,194	33,921	...	6,106	...	...
	Locomotive fuel	...	1,248	62	...	60,690	2,367	...	...
	Charcoal	199	...	112	179	...	100	...	...
	Babul seed	166	...	83	55	...	27	...	...
	Total firewood, &c...	73,699	1,248	13,451	34,155	60,690	8,600	...	4,851
	Forest Depôts.								
	Firewood	1,473	...	148	2,398	...	240	...	...
	Locomotive fuel	...	5,250	115	...	...	...	...	...
	Charcoal	2,900	...	815	...	...	...	...	...
	Total firewood, &c...	4,373	5,250	1,078	2,398	...	240	...	838
Jerruck Division.	*Sale Depôts.*								
	Babul logs	21	229	86	38	554	583	...	...
	Babul posts	1,356	...	68	...	...	...	...	...
	Jhau posts	271	...	14	...	...	...	...	...
	Jhau rafters	13	...	1	...	...	...	...	...
	Total timber...	1,661	229	169	38	554	583	414	...
	Forest Depôts.								
	Babul logs	303	3,802	475	317	3,794	474	...	...
	Babul slabs	700	...	44	...	...	...	...	...
	Total timber...	1,003	3,802	519	317	3,794	474	...	45
	Sale Depôts.								
	Firewood	156	...	28	1,875	...	337	309	...
	Forest Depôts.								
	Firewood	54,621	...	6,554	39,694	...	4,763	...	...
	Locomotive fuel	...	85,120	2,571	...	1,31,245	3,345	...	...
	Charcoal	976	...	351	2,037	...	733	...	...
	Babul seed	588	...	294	420	...	210	...	...
	Total firewood, &c...	56,185	85,120	9,770	42,151	1,31,245	9,051	...	719

Conservator's Office,
Hyderabad, 10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

ANNUAL FORM No. 58.

Forest Department, Bombay, Sind Circle.

Summary of Revenue and Expenditure of the different Divisions during the year 1888-89.

BUDGET HEADS.	Direction.	Hyderabad Division.	Jerruck Division.	Naushahro Division.	Sukkur Division.	Total during 1887-88.
REVENUE.						
I. Timber and other Produce removed from the Forests by Government Agency—						
a. Timber	...	39,116 3 7	13,038 6 9	2,795 1 1	8,913 14 10	63,863 10 3
b. Firewood and Charcoal	...	60,420 2 8	48,790 12 6	17,747 3 0	69,345 4 7	1,96,303 6 9
c. Bamboos	...	...	...	...	...	...
d. Sandalwood	...	...	...	...	...	...
e. Grass and other minor produce	...	612 10 0	2 0 0	38 13 0	495 6 9	1,148 13 9
II. Timber and other Produce removed from the Forests by Consumers or Purchasers—						
a. Timber	...	2,514 9 2	933 9 0	711 13 9	5,231 3 10	9,391 3 9
b. Firewood and Charcoal	...	4,009 2 0	368 6 11	3,799 5 4	25,484 5 11	33,661 4 2
c. Bamboos	...	...	...	...	...	...
d. Grazing and fodder Grass	...	16,379 2 0	14,269 12 0	8,875 4 4	17,655 14 3	57,180 0 7
e. Other minor produce	...	12,152 3 11	4,012 1 3	4,125 10 6	1,675 1 0	21,965 0 8
III. Confiscated, Drift and Waif Wood	...	5 0 0	2 0 8	...	27 11 0	34 11 8
IV. Revenue from Forests not managed by Government—						
a. Duty on Foreign Timber and other Forest produce	...	...	...	...	...	...
b. Revenue from shared and private forests	...	...	...	...	...	...
V. Miscellaneous—						
a. Fines and forfeitures	...	...	...	...	...	...
b. Refunds	29 12 11	...	...	...	17 8 5	...
c. Other sources	...	5,516 3 3	2,885 15 11	11,205 3 5	12,615 7 0	32,222 13 7
Total Revenue	29 12 11	1,40,725 4 7	84,352 2 6	49,298 6 5	1,41,461 13 7	4,15,867 8 0
EXPENDITURE.						
A. Conservancy and Works.						
I. Timber and other Produce removed from the Forests by Government Agency—						
a. Timber	...	14,732 15 9	8,984 12 5	469 0 4	3,242 11 9	27,429 8 3
b. Firewood and Charcoal	...	39,027 15 4	31,691 8 4	15,175 7 3	58,494 10 7	1,44,389 9 6
c. Bamboos	...	...	...	...	...	...
d. Sandalwood	...	...	...	...	...	...
e. Grass and other minor produce	...	536 13 7	14 12 0	8 15 0	8 8 0	569 0 7
II. Timber and other Produce removed from the Forests by Consumers or Purchasers.	...	1 0 0	4 6 0	3 9 0	...	8 15 0
III. Confiscated Drift and Waif Wood	...	...	...	...	...	...
IV. Revenue from Forests not managed by Government—						
a. Duty on foreign Timber and other Forest produce	...	...	...	...	...	...
b. Revenue from shared and private Forests.	...	...	...	...	...	...
V. Rent of Leased Forests and Payments to Shareholders in Forests managed by Govt.	...	...	...	...	...	...
VI. Live Stock, Stores, Tools and Plant—						
a. Purchase of Cattle	...	...	...	...	...	...
b. Feed and keep of Cattle	...	46 14 0	37 6 6	...	141 5 6	225 10 0
c. Stores, Tools and Plant	...	247 3 5	1 2 0	...	29 14 5	278 3 10
VII. Communications and Buildings—						
a. Roads and Bridges	...	...	...	...	0 8 0	0 8 0
b. Buildings	...	326 4 0	35 2 6	146 14 0	226 10 0	734 14 6
c. Other Works	...	...	...	...	24 15 8	24 15 8
VIII. Demarcation, Improvement and Extension of Forests—						
a. Demarcation	...	...	...	787 10 4	3 12 0	791 6 4
b. Compensation for Land and Rights	...	...	...	...	...	...
c. Surveys and Working Plans	...	365 6 0	3,156 11 4	637 8 0	1,535 3 0	5,694 12 0
d. Plantations	...	919 12 4	272 1 7	26 13 0	1,938 5 8	3,157 0 7
e. Protection from Fire	...	...	...	...	...	...
f. Other Works	...	698 5 7	...	539 3 8	314 11 2	1,552 4 5
IX. Miscellaneous—						
a. Refunds	...	...	...	...	...	...
b. Law Charges	...	...	...	...	...	...
c. Other Charges	...	16 5 0	3 11 0	...	1,007 8 3	1,027 8 3
Total A, Conservancy and Works	...	56,918 15 0	44,201 9 4	17,795 0 7	66,968 12 0	1,85,884 4 11
B. ESTABLISHMENTS.						
I. Salaries—						
a. Conservators	15,000 0 0	...	...	...	...	15,000 0 0
b. Superior Officers	...	2,825 0 0	6,575 0 0	2,100 0 0	6,620 0 0	18,120 0 0
c. Subordinate Forest & Depôt Establishments	3,408 0 0	8,763 7 2	5,816 5 1	7,644 13 3	15,684 12 0	37,909 5 6
d. Office Establishments	14 0 0	1,505 2 1	1,296 0 0	1,302 0 0	1,897 8 2	9,408 10 9
e. Deputation and Special Allowances	...	...	...	...	...	14 0 0
II. Travelling Allowances—						
a. Conservators	2,400 0 0	...	...	...	...	2,400 0 0
b. Superior Officers	...	1,239 5 4	1,855 2 7	1,200 0 0	2,543 5 2	6,837 13 1
c. Subordinate Forest & Depôt Establishments	885 12 5	787 13 0	540 0 0	615 1 9	1,200 13 1	3,143 11 10
d. Office Establishments	...	573 10 1	450 2 0	438 4 8	696 13 1	3,045 10 3
III. Contingencies—						
a. Stationery	4 8 0	78 13 3	66 10 9	89 13 3	179 7 3	419 4 6
b. Carriage of Tents and Records	173 0 0	114 5 8	167 11 6	126 0 0	97 8 6	683 9 8
c. Rents, Rates and Taxes	300 0 0	240 0 0	255 0 0	240 0 0	87 0 0	1,122 0 0
d. Pay and Police Guards	...	...	...	...	...	...
e. Official Postage	131 8 0	125 4 0	160 6 0	235 5 0	420 1 6	1,072 8 6
f. Sundries	248 9 5	256 2 3	73 1 2	227 4 3	245 0 5	1,050 1 6
Total B. Establishments	22,571 5 10	16,508 14 10	17,255 7 1	14,218 10 8	29,672 5 2	1,00,226 11 7
Grand Total of Expenditure	22,571 5 10	73,427 13 10	61,457 0 5	32,013 11 3	96,641 1 2	2,86,111 0 6

No. F. 14894.

Forwarded to the Conservator of Forests, Sind Circle, under Section 238 of the Forest Code.

Dated *Bombay,* *1889.*

A. F. COX.
Acting Accountant General.

FORM No. 59.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE, ACCOUNT CURRENT FOR THE YEAR 1888-89.

To Cash Balance	...	102 13 6	By Refunds and Drawbacks—		
„ VIII—Assessed Taxes—Income tax	...	1,026 4 8	„ Refunds Divided Heads, Forest	...	611 8 7
„ IX—Forests	...	4,15,867 8 0	„ 11 Forest	...	2,86,111 0 6
„ XXII.—Receipts in aid of superannuation subscription to the Military Fund ...	...	414 0 0	„ 19 Law and Justice—		
„ Revenue Deposits, Forests	...	2,408 4 5	Jails—		
Advances Recoverable—			District Jails—		
„ Forest advances	78,535 5 6	...	Contingencies, miscellaneous office expenses	...	469 6 0
„ Objection book advances	183 5 4	...	„ Revenue Deposits	...	2,371 15 5
		78,718 10 10	Advances Recoverable—		
„ Cash recoveries...	...	15 11 0	„ Forest advances	91,737 3 4	...
„ Cheques and Bills, Departmental Cheques—			„ Objection book advances	...	91,737 3 4
Forests	...	3,01,650 14 10	„ Cash Recoveries	...	15 11 0
Forest Remittances—			„ Cheques and Bills—		
„ Remittances to Treasuries...	...		(Departmental Cheques)—	...	...
„ Inter Divisional Transfers	3,877 2 2		„ 26 Scientific and other Minor Departments—		
„ Inter Departmental Transfers	2,159 13 0	6,036 15 2	Farm, farming charges	...	945 0 0
Account between India and Bombay—			Forest Remittances—		
III.—Items adjustable, Bengal W. F. Pension Fund	...	356 8 0	Remittances to Treasuries	3,00,215 9 9	...
Account between Bombay and P. W. D., (Railway Branches)—			Inter Divisional Transfers	3,880 1 2	...
IV.—Items adjustable by P. W. D., (N. W. Railway)	...	21 4 0	Inter Departmental Transfers	2,107 15 0	3,06,233 9 11
Account between Bombay, and P. W. D., (Ordinary Branches)—			Account Current—		
IV.—Items adjustable by P. W. D., Payments by C. F.	...	2 8 0	Account between Bombay and Military Bombay—		
			IV.—Miscellaneous	...	20,049 11 6
			Account between Bombay and P. W. D., Ordinary Branches—		
			IV.—Items adjustable by P. W. D., Inter Departmental charges...	...	742 10 3
			Account between Bombay and P. W. D., (Railway Branches)—		
			IV.—Items adjustable by P. W. D., (N. W. Railway)	...	97,233 14 1
			Cash Balances	...	69 11 10
Grand Total Rs...	...	8,06,621 6 5	Grand Total Rs ..	...	8,06,6 1 6 5

No. F. / 14893.

Forwarded to the Conservator of Forests, Sind Circle, under Section 238 of the Forest Code.

Accountant General's Office,
Bombay, —— August 1889.

A. F. COX,
Acting Accountant General.

ANNUAL FORM No. 60.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE, REVENUE RECEIVED AND OUTSTANDINGS ON ACCOUNT OF REVENUE DURING 1888-89.

Division.	Particulars.	Outstandings at commencement of year.	Value of Sales and other Revenue during year.	Total.	Amount realized during year.	Balance due to the Department at end of year.	Remarks.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Sukkur	I.—Timber and other produce removed from the forests by Government agency—						
	(a) Timber	.....	8,913 14 10	8,913 14 10	8,913 14 10	.....	
	(b) Firewood and charcoal	92 0 5	69,345 4 7	69,437 5 0	69,345 4 7	.....	
					* 92 0 5		* Written off as per G. R. No. 3799 of 11th June 1888.
	(e) Grass and other minor produce	.....	495 6 9	495 6 9	495 6 9	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	(a) Timber	.....	5,231 3 10	5,231 3 10	5,231 3 10	.....	
	(b) Firewood and charcoal	168 12 0	25,315 9 11	25,484 5 11	25,484 5 11	.....	
	(d) Grazing and fodder grass	.....	17,655 14 3	17,655 14 3	17,655 14 3	.....	
	(e) Other minor produce	.....	1,675 1 0	1,675 1 0	1,675 1 0	.....	
	III.—Confiscated drift and waif wood	.....	27 11 0	27 11 0	27 11 0	.....	
	Total...	260 12 5	1,28,660 2 2	1,28,920 14 7	1,28,920 14 7	.....	
Naushahro	I.—Timber and other produce removed from the forests by Government agency—						
	(a) Timber	.....	2,795 1 1	2,795 1 1	2,795 1 1	.....	
	(b) Firewood and charcoal	.....	17,759 3 0	17,759 3 0	17,747 3 0	12 0 0	
	(e) Grass and other minor produce	.....	38 13 0	38 13 0	38 13 0	.....	
	II.—Timber and other produce removed from the forests by consumers or purchasers—						
	(a) Timber	.....	711 13 9	711 13 9	711 13 9	.....	
	(b) Firewood and charcoal	.....	3,799 5 4	3,799 5 4	3,799 5 4	.....	
	(d) Grazing and fodder grass	.....	8,875 4 4	8,875 4 4	8,875 4 4	.....	
	(e) Other minor produce	.....	4,125 10 6	4,125 10 6	4,125 10 6	.....	
	III.—Confiscated drift and waif wood	.....	.....	.....	.....	.....	
	Total...	.....	38,105 3 0	38,105 3 0	38,093 3 0	12 0 0	

Hyderabad.....	I.—Timber and other produce removed from the forests by Government agency—											
	(a) Timber	171	4	3	39,287	2	5	39,458	6	8	39,116	3	7	342	3	1	
	(b) Firewood and charcoal.....	2,070	0	0	59,802	7	8	61,872	7	8	60,420	2	8	1,452	5	0	
	(e) Grass and other minor produce	.....			612	10	0	612	10	0	612	10	0	.....			
	II.—Timber and other produce removed from the forests by consumers or purchasers—																
	(a) Timber	.....			2,776	11	5	2,776	11	5	2,514	9	2	262	2	3	
	(b) Firewood and charcoal.....	.....			4,010	12	0	4,010	12	0	4,009	2	0	1	10	0	
	(d) Grazing and fodder grass	.....			16,379	2	0	16,379	2	0	16,379	2	0	.....			
	(e) Other minor produce	.....			12,152	3	11	12,152	3	11	12,152	3	11	.....			
	III.—Confiscated drift and waif wood.....	.....			5	0	0	5	0	0	5	0	0	.....			
	Total...	2,241	4	3	1,35,026	1	5	1,37,267	5	8	1,35,209	1	4	2,058	4	4	
Jerruck	I.—Timber and other produce removed from the forests by Government agency—																
	(a) Timber	1,041	4	0	12,138	13	5	13,180	1	5	13,038	6	9	141	10	8	The outstandings under V (c) at the end of the year amount to Rs. 7-6-0.
	(b) Firewood and charcoal.....	3,977	4	9	51,034	13	7	55,012	2	4	48,790	12	6	6,221	5	10	
	(e) Grass and other minor produce	.....			2	0	0	2	0	0	2	0	0	.....			
	II.—Timber and other produce removed from the forests by consumers or purchasers—																
	(a) Timber	.....			933	9	0	933	9	0	933	9	0	.....			
	(b) Firewood and charcoal.....	20	0	0	348	6	11	368	6	11	368	6	11	.....			
	(d) Grazing and fodder grass	3	4	0	14,269	12	0	14,273	0	0	14,269	12	0	3	4	0	
	(e) Other minor produce	.....			4,087	1	3	4,087	1	3	4,012	1	3	75	0	0	
	III.—Confiscated drift and waif wood.....	.....			2	0	8	2	0	8	2	0	8	.....			
	Total...	5,041	12	9	82,816	8	10	87,858	5	7	81,417	1	1	6,441	4	6	
Total Sind Circle..	I.—Timber and other produce removed from the forests by Government agency—																
	(a) Timber	1,212	8	3	63,134	15	9	64,347	8	0	63,863	10	3	483	13	9	Do. do. do.
	(b) Firewood and charcoal	6,139	5	2	1,97,941	12	10	2,04,081	2	0	1,96,303	6	9	7,685	10	10	
											* 92	0	5				* Written off.
	(e) Grass and other minor produce	.....			1,148	13	9	1,148	13	9	1,148	13	9	.....			
	II.—Timber and other produce removed from the forests by consumers or purchasers—																
	(a) Timber	.....			9,653	6	0	9,653	6	0	9,391	3	9	262	2	3	
	(b) Firewood and charcoal	188	12	0	33,474	2	2	33,662	14	2	33,661	4	2	1	10	0	
	(d) Grazing and fodder grass	3	4	0	57,180	0	7	57,183	4	7	57,180	0	7	3	4	0	
	(e) Other minor produce	.....			22,040	0	8	22,040	0	8	21,965	0	8	75	0	0	
	III.—Confiscated drift and waif wood.....	.....			34	11	8	34	11	8	34	11	8	.....			
	Grand Total...	7,543	13	5	3,84,607	15	5	3,92,151	12	10	3,83,640	4	0	8,511	8	10	

Hyderabad,
10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

FORM No. 61.

FOREST DEPARTMENT, BOMBAY, SIND CIRCLE.

Outstandings and Liabilities on account of Contractors and Disbursers for 1888-89.

Divisions.	Department Debtor.			Department Creditors.			Balance due.		Remarks.
	At commencement of the year.	Recoveries in cash and value of supplies and works done during the year.	At close of year.	At commencement of year.	Payments made during the year.	At close of year.	To Department (outstandings.)	To Department Liabilities.	
Contractors.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Jerruck	.....	7,895 0 0	7,895 0 0	2,800 0 0	12,553 0 0	15,353 0 0	7,458 0 0	.....	
Hyderabad	.....	500 0 0	500 0 0	.....	1,500 0 0	1,500 0 0	1,000 0 0	.....	
Naushahro	.....	.....	.....	.....	.....	.....	.....	.....	
Sukkur	.....	61 3 10	61 3 10	171 5 10	.....	171 5 10	110 2 0	.....	
Total Contractors...	.....	8,456 3 10	8,456 3 10	2,971 5 10	14,053 0 0	17,024 5 10	8,568 2 0	.....	
Disbursers.									
Jerruck	.....	19,335 12 6	19,335 12 6	144 8 0	19,397 4 6	19,541 12 6	206 0 0	.....	
Hyderabad	.....	28,918 6 4	28,918 6 4	191 0 3	35,561 0 0	35,752 0 3	7,203 12 11	.....	
Naushahro	.....	10,036 2 1	10,066 2 1	.....	10,066 2 1	10,066 2 1	.....	.....	
Sukkur	.....	11,758 12 9	11,758 12 9	1,169 0 3	12,659 12 9	13,828 13 0	2,070 0 3	.....	
Total Disbursers...	.....	70,079 1 8	70,079 1 8	1,504 8 6	77,684 3 4	79,188 11 10	9,479 13 2	.....	
Grand Total..	.....	78,535 5 6	78,535 5 6	4,475 14 4	91,737 3 4	96,213 1 8	18,047 15 2	.....	

No. F. / 14895.

Forwarded to the Conservator of Forests, Sind Circle, under Section 238 of the Forest Code.

Accountant General's Office,
Bombay, August 1889.

A. F. COX,
Acting Accountant General.

ANNUAL FORM No. 62.

FOREST DEPARTMENT, SIND CIRCLE, Financial Results of the year 1888-89.

Division.	Timber and other produce removed from the Forests by Government Agency.		Other revenue.		Formation, protection and improvement of Forests	Total.		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Sukkur	78,755	74,364	62,718	13,542	16,413	1,41,473	1,04,319	
Naushahro	20,581	21,333	28,720	5,685	7,672	49,301	34,690	
Hyderabad	1,00,154	62,603	40,581	8,175	10,288	1,40,735	81,066	
Jerruk	61,831	47,998	22,527	7,298	10,740	84,358	66,036	
Total...	2,61,321	2,06,298	1,54,546	34,700	45,113	4,15,867	2,86,111	

Hyderabad,
10th September 1889.

J. G. McRAE, Colonel,
Conservator of Forests, Sind Circle.

STATEMENT showing the progress of Forest Demarcation and Settlement Work in the Sind Circle for 1888-89.

Class of Forests.	At the commencement of the year. Area under Section 34 in which private rights have not been enquired into, settled and recorded.	Area settled during the year under		Area of Reserved Forests alienated under Section 26.	Area of protected Eorests disforested under Government orders.	At the end of the year. Areas under Section 34 in which private rights have not been enquired into, settled and recorded.
		Chapter II of the Act.	Chapter IV of the Act.			
	Square miles.	Square miles.	Square miles.	Square miles.	Square miles.	Square miles.
Reserved Forests...	.....	.....	.....	.....	.....	.....
Protected Forests	.....	.....	.....	.....	.....	.....

Conservator's Office,
Hyderabad, 10th September 1889.

J. G. McRAE, Colonel
Conservator of Forests, Sind Circle.

No. 3461 OF 1889.

REVENUE DEPARTMENT.

Commissioner's Office,
Karachi, 24th September 1889.

Submitted to Government.

2. During the year the area under reserved forest increased from 893 square miles 150 acres to 937 square miles 388 acres. The increase is mainly due to an area of 79 square miles, 191 acres having been constituted reserved forest under the Act. There was also a net addition of 3 square miles 197 acres owing to the action of the river. But little valuable forest land was lost, the land eroded being for the most part of recent formation on which there was no valuable timber.

3. At the end of the year there were 31,325 acres 37 guntas of land, which had been selected for forest, awaiting final settlement. Proposals for the settlement of the Tatta blocks, comprising an area of 18,277 acres 29 guntas, have since been sanctioned by Government, so that the area still remaining to be settled is now 13,048 acres 29 guntas. The delay which has taken place in disposing of this work is due to the time of Mr. Mules, the Forest Settlement Officer, being much taken up by other duties. It is expected, however, that the work of settlement will be completed within the current year.

4. The Conservator states that the work of demarcation may now be considered to be practically completed; but he suggests that it may be found advisable to take up certain lands in the north of the Hyderabad District which are suitable for babul forest. Colonel McRae's proposals will be awaited; but there is likely to be a great extension of cultivation in that part of the country during the next few years, and the Commissioner is disposed to think that no more land should be taken up for forest purposes until it becomes evident that the present reserves are inadequate to the demands made upon them.

5. There was a slight increase in the number of forest offences. Owing to the failure of rain in the hills and in the desert, a great number of cattle owners resorted to the "kachas" or alluvial lands bordering on the river, and consequently cases of trespass and illicit grazing became more frequent. The number of cases dealt with by the Magistrates fell from 130 in 1887-88 to 105 in 1888-89, and, as in the previous year, convictions were obtained in 60 per cent. of the cases. When the difficulty of obtaining independent evidence in forest cases is taken into consideration, it will appear that the forest officers have used their powers with discretion.

6. While the number of forest fires was the same as in the previous year, the area burnt increased from 3,572 to 7,275 acres. Fires were, as usual, most frequent in the Sukkur Division where reed grass is most abundant. There is no doubt that in certain tracts, where the grass has become so dense and impenetrable as to check the growth of all other vegetation, occasional firing is beneficial, and on the whole it may be doubted whether forest fires in Sind are the cause of any serious loss.

7. In dealing with the question of grazing fees, the Conservator, after remarking that some revenue officers view with great disfavour the possession of kachas by the Forest Department, and think it would be better to clear and devote them to cultivation of cereals, puts forward a plea for the acquisition and retention of lands of this description by the Forest Department on the ground that they are valuable for the purpose of raising fodder crops, and that it would be as "stupid as it would be cruel to ignore the wants of the

pastoral section of the population by not holding in reserve grazing grounds in a province that has such a scanty and precarious rainfall.". No doubt it is important to maintain a supply of fodder or free grazing, but this point does not materially affect the question whether the kachas should be placed at the disposal of the Forest Department or not. As a matter of fact no crops are grown on these lands solely or even mainly for forage, while there are very large areas under wheat and oil-seeds, the most valuable export crops of the province. The proportion which is at present in the possession of the Forest Department to the whole area available is so small that its reservation for grazing or fodder can make but little difference. Large areas outside those belonging to the Forest Department must necessarily be left uncultivated, for the reason that cultivators are not forthcoming. The whole of these areas are yearly flooded and produce a never failing supply of grass and grazing independently of any action of the Forest Department, and there is no occasion to make any additions to the Forest reserves, simply with a view to their usefulness as grazing grounds till they are wanted for timber. The claims of the Department to any land which is wanted for timber, and which is suitable for its production and reservation of which is generally practicable and advisable, is already recognized, and it would not, in the opinion of the Commissioner, be desirable to go further.

8. In this province there is a very large amount of cultivation within forest limits, the assessment on which is credited to the Forest Department. There is nothing in the report to show what extent of land is under cultivation or what amount of revenue is derived from this source. This information should be given in future reports.

9. The financial results of the year, as compared with those of 1887-88, were as follows :—

	1887-88.	1888-89.	Decrease.
Receipts ..... Rs.	6,32,302	4,15,867	2,16,435
Expenditure ..... „	4,66,127	2,86,111	1,70,016
Net Revenue Rs.	1,66,175	1,29,756	46,419

Thus, there was a decrease of Rs. 2,16,435 in the gross and of Rs. 46,419 in the net revenue.

10. The revenue of the Forest Department in Sind depends, and so far as can be judged, must for many years continue to depend, mainly upon the sale of fuel to the N. W. Railway. During the year the Railway Administration having large stocks of fuel on hand reduced their demands, while the question of using petroleum or coal instead of wood fuel was under discussion. The amount of wood taken by the railway was 3,72,476 maunds, as against 15,43,278 maunds supplied in the previous year. The net loss of revenue on this account was Rs. 74,470, while the decrease in the net revenue of the Department was only Rs. 46,419. Hence if the demand for railway fuel had been the same as in the previous year there would have been an increase of Rs. 28,051 in the net revenue. This amount has been made up partly by improved receipts from other sources and partly by a reduction in the expenditure, which has fallen from 65·7 to 61·3 per cent. on the gross receipts.

11. The question of the terms on which fuel should be supplied to the railway has been under discussion for some time, and in order to prevent a dead lock, it was absolutely necessary that some understanding should be arrived at. At a meeting between the Commissioner and the Director, N. W. Railway, on the 2nd April, it was agreed (1) that fuel should be supplied at the present rates up to the 1st April 1890 ; (2) that after that date a royalty of Rs. 12 per 1,000 cubic feet should be paid in addition to actual cost of cutting and delivery ; (3) that fuel supplied by the Forest Department

should be used at all stations at which it can be supplied cheaper than fuel supplied elsewhere; and (4) that in every case in which the Director may be able to show that fuel can be obtained more cheaply from other sources, a reduction will be made in the royalty sufficient to make it profitable to the railway to take fuel supplied by the Forest Department. These terms were accepted by the Director under protest and subject to the orders of the Government of India, which it was his intention to apply for; but as they are in accordance with the principles laid down in the Government of India's letter No. 1263 F, dated the 6th November 1888, to the address of the Bombay Government, and are fair to both Departments, it is not expected that the Government of India will consider it necessary to make any modification in the arrangement.

12. The business of the depôts in the Sukkur Division having suffered considerably from the competition of timber imported by river from the Punjab and Bahawalpur, the Conservator recommended that a duty should be placed on imported timber. But as it was considered unfair to tax the consumer in order to protect the revenue of the Forest Department, it was resolved to reduce the selling prices of timber at these depôts by 20 per cent. The result of this experiment is not yet known, but Colonel McRae does not consider that receipts will be raised to their former level.

13. There is nothing else in the report which calls for special comment. The administration of the Department has been successfully carried on by Colonel McRae under circumstances of considerable difficulty, and his subordinates also appear to have done good work.

A. C. TREVOR,
Acting Commissioner in Sind.

No. 3012.

REVENUE DEPARTMENT.

Bombay Castle, 2nd May 1890.

Letter from the Conservator of Forests, Sind Circle, No. 828, dated 10th September 1889—Forwarding the Forest Administration Report of the Sind Circle for the year 1888-89 with its subsidiary statements.

Memorandum from the Commissioner in Sind, No. 3461, dated 24th September 1889—Submitting the above with his remarks.

Letter from the Conservator of Forests, Northern Circle, No. 3696, dated 31st October 1889—Submitting the Forest Administration Report of the Northern Circle for the year 1888-89 with its subsidiary statements.

Memorandum from the Commissioner, Northern Division, No. 17, dated 5th January 1890.
Letter from the Commissioner, Central Division, No. R-445, dated 27th January 1890.
} Submitting their remarks on the Forest Administration Report of the Northern Circle.

Letter from the Conservator of Forests, Southern Circle, No. 3402A., dated 16th November 1889—Submitting the Forest Administration Report of the Southern Circle for the year 1888-89 with its subsidiary statements.

Memorandum from the Commissioner, Southern Division, No. 105, dated 15th January 1890—Submitting, with his remarks, the Forest Administration Report of the Southern Circle.

Letter from the Conservator of Forests, Northern Circle, No. 4816, dated 18th January 1890—Stating, with reference to Government Resolution No. 8144, dated 26th October 1889, that he has in his administration report for 1888-89 reported fully on the general condition of the forests as regards reproduction.

Letter from the Conservator of Forests, Sind Circle, No. 1626, dated 25th January 1890—Stating, with reference to Government Resolution No. 8144, dated 26th October 1889, that he has gone rather fully into the subject of reproduction in his annual report for 1888-89.

Letter from the Conservator of Forests, Southern Circle, No. 4422, dated 28th January 1890—Submitting the report called for in Government Resolution No. 8144, dated 26th October 1889.

Memorandum from the Commissioner, Northern Division, No. 619, dated 28th February 1890—Forwarding, with reference to paragraph 6 of his office No. 17, dated 5th January 1890, a letter from the Collector of Surat, who states that the forest settlement of lands notified under Section 34 of the Indian Forest Act in that district has been completed while that of a small area of lands notified under Section 4 in Bulsár and Párdi is in progress.

Letter from the Conservator of Forests, Southern Circle, No. 5355, dated 29th March 1890—Submitting the explanation called for by Government regarding outstandings in the North Kánara Division.

RESOLUTION.—The financial results of the administration of the Forest Department during the year 1888-89 are shown in the following statement, which comprises also the corresponding figures of the previous year :—

	Receipts.		Expenditure.		Net Revenue.	
	1887-88.	1888-89.	1887-88.	1888-89.	1887-88.	1888-89.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Northern Circle	9,68,625	11,60,769	7,23,135	7,27,412	2,45,490	4,33,357
Southern Circle	14,34,650	12,73,554	7,46,260	6,75,601	6,88,390	5,97,953
Sind Circle	6,32,302	4,15,867	4,66,127	2,86,111	1,66,175	1,29,756
Total ...	30,35,577	28,50,190	19,35,522	16,89,124	11,00,055	11,61,066

The gross receipts, Rs. 28,50,190, have decreased by Rs. 1,85,387, but the expenditure having been reduced by Rs. 2,46,398, there is a net increase of revenue of Rs. 61,011, the total net revenue for the year being Rs. 11,61,066.

2. The increase is wholly in the Northern Circle where the results obtained are, in the opinion of His Excellency in Council, highly creditable to Mr. Shuttleworth and the officers serving under him. The gross revenue of that Circle is the largest on record by Rs. 1,23,472, while the net revenue exceeds that of the previous year by Rs. 1,87,867. The chief items of increase are timber (more than a lákh) and grazing fees. Only one Division of the Northern Circle, namely, Sholápur, failed to balance receipts and expenditure, but even in that Division a considerable improvement on the financial position of the previous year is discernible, the deficit having been reduced from Rs. 12,857 in 1887-88 to Rs. 2,957 in the year under review, as shown in the margin.

	1887-88. Rs.
Receipts	16,445
Expenditure	29,302
Balance ...	-12,857
	1888-89. Rs.
Receipts	24,647
Expenditure	27,604
Balance ...	-2,957

3. Further analysis of the figures of the Northern Circle shows that there has been an increase in both gross and net revenue in all Divisions except the Panch Mahals, which gives a decrease of Rs. 8,778 gross and Rs. 8,609 net revenue. This decrease is explained to be due to fewer sales of timber during the year consequent on a combination among the Godhra timber merchants. Looking to the position of the Panch Mahals as lying on the confines of, and connected by railway with, the teakless plain of Northern Gujarát, with its well-to-do and dense population, the Governor in Council trusts that every attempt will be made to render the Forest Department sales independent of local combinations by opening a wider market for the sale of the timber of that Division.

The most notable increases were in the Surat and South Thána Divisions. In the former, the increase of revenue was on account of the better prices obtained at the auction sales of the wood of the Upper Dángs: in the case of South Thána Division, the increase in receipts was in some measure due to sales of timber in connection with the Tánsa Water-works.

It is observed with satisfaction that in the Thána Divisions the tendency noticed in previous reviews to diminution of the departmental fellings with a more than corresponding increase in contract fellings still continues.

4. In the Southern Circle the decrease in net revenue is Rs. 90,437, from which Mr. MacGregor would deduct Rs. 63,052, being the excess of outstandings in the year over the previous year. It is impossible to adopt this reasoning, for the arrears, if recovered, will be credited in the accounts of the ensuing year. In his letter No. 5355, dated 29th March 1890, the Conservator states, in explanation of the heavy outstandings in the Northern Division of Kánara, that the " merchants who bought the wood in auction were unable to sell it quickly, and consequently it was not quickly removed from depôt." Provided the safeguards mentioned by Mr. MacGregor are fully observed, the practice appears unobjectionable and may be allowed to continue.

5. In the Southern Circle the only Division worked at a loss is Ratnágiri, and it is satisfactory to observe that in that Division appreciable progress has been made towards, at least, an equalization of receipts and expenditure, the loss to Government in the year under review being Rs. 1,468 as against Rs. 9,849 in the previous year.* While the expenditure (chiefly under establishment, demarcation and law charges) has decreased, the revenue from timber has risen from Rs. 9,108 to Rs. 10,731. In the Central Kánara Division, the net revenue has fallen from Rs. 1,87,887 to Rs. 1,06,287; the decrease is almost entirely under " timber," and is reported to be due to the very limited demand for sleepers for the Southern Mahrátta Railway. In the Belgaum Division, while

*

	1887-88. Rs.
Receipts	10,311
Expenditure	20,160
Balance ...	-9,849
	1888-89. Rs.
Receipts	12,050
Expenditure	13,518
Balance ...	-1,468

the gross revenue has fallen from Rs. 3,39,847 to Rs. 2,84,064, the net revenue shows a decrease of Rs. 4,447 only. In the case of firewood sales in this Division, it is observed that there is a *decrease* in gross receipts of Rs. 31,518, but the net receipts from this source have *increased* by no less an amount than Rs. 10,954. In connection with the difficulties of transport, the proposals of the Conservator for the construction of a forest tramway have been considered by Government and it has been shown in Resolution No. 4605, dated 29th June 1889, that it is very much more to the interest of the Railway Company than to that of the Forest Department that such a tramway should be constructed and that the Company are in a better condition than Government to undertake its construction and working. The financial results of the administration of the other Divisions of this Circle do not call for particular notice.

6. In the Sind Circle there is a decrease in net revenue of Rs. 36,419. The Conservator has erroneously stated the decrease at Rs. 46,419, an error adopted by the Commissioner in Sind in paragraph 9 of his forwarding memorandum. Receipts from firewood and charcoal exhibit a net decrease of Rs. 60,269, which, Colonel MacRae states, is due to the North-Western Railway having had a large stock of fuel on hand at the commencement of the year, so that a smaller supply was indented for during the year. At a conference held with the Railway authorities on the subject, it was arranged that the existing rates charged for fuel supplied to the Railway should continue in force up to 1st April 1890, after which date new rates were to be charged. Government are glad to see that Colonel MacRae is fully alive to the necessity of doveloping and stimulating a demand for wood independent of the requirements of the North-Western Railway and that his efforts in this direction have met with some measure of success. 222,625 cubic feet of firewood were exported to Bombay, Káthiáwár and other ports, while with a view to increasing the trade in wood between Bombay Presidency proper and Sind, a monopoly for three years of exporting wood to Bombay and Cutch Mándvi was granted to a contractor.

7. In Form 58 appended to the Sind Circle report a sum of Rs. 32,222-13-7 is entered under "Revenue V. Miscellaneous (c) Other sources." The amount considerably exceeds that shown under the same sub-head in the reports of the Northern and Southern Circles and the Conservator should be asked to state how it is made up and whether it includes the assessment levied on lands under cultivation within forest limits, referred to by the Conservator in paragraph 8 of his memorandum.

8. The changes in the forest area during the year are shown in the following statement :—

Circle.	Area on 1st April 1888.		Added.		Excluded.		Area on 31st March 1889.	
	Reserved.	Protected.	Reserved.	Protected.	Reserved.	Protected.	Reserved.	Protected.
	Sq. Ms.	Sq. Ms.	Sq. Ms.	Sq. Ms.	Sq. Ms.	Sq. Ms.	Sq. Ms.	Sq. Ms.
Northern Circle ...	7,128	1,066	328	1	10	20	7,446	1,047
Southern Circle ...	1,817	3,412	2	...	...	...	1,819	3,412
Sind Circle	893	1	93	...	13	...	973	1
Total ...	9,838	4,479	423	1	23	20	10,238	4,460

In the Northern Circle, of the area shown as added during the year, 83 square miles represent a nominal increase only, being due to rectification of forest areas in the Násik Division which had previously been incorrectly recorded. Otherwise, the main additions in that Circle are accounted for by reservations in Násik (Peint and Igatpuri Tálukas) and East Khándesh. The greater portion of the 20 square miles of protected forest disforested during the year has since been included in reserved forest. A small area was added to reserved forest in the Belgaum Division of the Southern Circle. In Sind, the increase occurs chiefly

in the Naushâhro Division, while the exclusion of 13 square miles of reserved forest is explained to be due to changes in the course of the river. The lands thus lost, however, were of no great value, and were for the most part used as grazing grounds.

9. The figures relating to progress of settlement are not given with clearness in any of the reports now under consideration. While the areas added to forest during the year do not include areas in respect of which settlement was completed but not sanctioned during the year, so, on the other hand, they include areas settled in the previous year and sanctioned during the year under review. It is however clear that the settlement of forest areas notified under Section 34 of the Indian Forest Act is not progressing as expeditiously as is desirable. The following are the figures for the year :—

	Area settled during the year.	Area remaining to be settled.
	Sq. miles.	Sq. miles.
Northern Circle	105	1,972
Southern Circle	308	3,165
Sind Circle	....	...
Total ...	413	5,137

In paragraph 57 of his report the Conservator, Northern Circle, has shown an area of 84 square miles of Reserved Forest notified under Section 34 in the Násik Division in which rights have not been enquired into and recorded. This area did not appear in Mr. Shuttleworth's report of the previous year, and the reason of its inclusion now should have been explained. It is presumed that the area has no connection with the 83 square miles referred to in the preceding paragraph, as the fact of the latter being incorrectly recorded could not affect the validity or the extent of the settlement.

In respect of areas notified under Sections 4 and 28 of the Act, the settlement remaining to be done appears to be as follows :—

In Northern Circle 568 square miles.
„ Sind Circle 49 „

The Conservator, Southern Circle, has not given the corresponding figures for his Circle.

10. In paragraph 2 of his report, and again in paragraph 17, the Conservator, Sind Circle, states that no expenditure was incurred during the year under the head of Forest Demarcation and Settlement, but this statement cannot be reconciled with Form 58 appended to his report, which shows an expenditure under "VIII (*a*) demarcation" of Rs. 791-6-4. The total expenditure under that head in all three Circles amounted during the year to Rs. 32,468.

11. The year saw the institution, from 1st October 1888, of a special Forest Survey Branch, for the conducting, under the orders and supervision of this Government, of topographical surveys of the forests of the Presidency. The survey party worked at various times throughout the year in the Thána, Násik, Poona, Sátára and Kánára Divisions. The amount of detail survey work done is reported to have been as under :—

Survey on 4" to the mile scale.	Square miles.	Cost, Rs.
Northern Circle	... 317	20,605
Southern Circle	... 132·75	25,200
Survey on 8" to the mile scale.		
Northern Circle	... 139·477	22,619.

or 449·75 square miles on the 4" scale and 139·477 square miles on the 8" scale at a total cost of Rs. 68,424. From the information embodied in the Conservators' reports, it is not clear whether these figures relate to the period from 1st October 1888 or from 1st April 1883 to 31st March 1889. The cost per square mile—the only profitable datum for estimates of survey work—is given as follows :—

Scale.		Rs.
4″ to the mile.	Northern Circle ...	... 65 per square mile.
Do.	Southern Circle ...	... 190 „
8″ to the mile.	Northern Circle ...	... 187 „

The vast difference between the cost of surveys on the 4″ to the mile scale in the two Circles is remarkable, but is possibly attributable to the more rugged and difficult nature of the forest tract surveyed in the Southern Circle. As compared with the surveys of the previous year, which cost per square mile—

Scale.		Rs.
In Southern Circle 8″ to the mile	...	... 250 per square mile.
„ Northern Circle 8″ do.	...	... 272 do.

there is a very appreciable improvement, but the cost is still much greater than was anticipated and estimated by Government. Without more accurate and detailed figures, it would be futile to attempt further consideration of the survey work done and the cost thereof, but as such information is mainly desirable in respect of operations that will cost Government for some years to come a large annual sum, the Survey and Settlement Commissioner should be asked to submit yearly a report on the working of the Forest Survey Party. The Commissioner should also be requested to state whether he would propose that his report be for the year ending 31st March, or for that ending 30th June. Mr. Shuttleworth's opinion—reiterated in his present report—on the scale of the survey maps has already been laid before Government and orders passed thereon.

12. In the Northern Circle the Working Plans Division continued its work in the two Thána Divisions. It is reported that the whole reserved forest area of the Divisions, and a certain portion—not specified—of the protected forests have come under the operations of the Working Plans Division. Looking to this fact, and to the results of the year's work set out in paragraph 72 of Mr. Shuttleworth's report, Government are of opinion that the Conservator should be in a position to present, in future reports, valuable information as to the capabilities of the Thána forests and whether they have hitherto been under or overworked. In the Southern Circle the operations were, as in the previous year, confined to a percentage enumeration and measurement of trees in certain areas of the North Kánara Division. About 9 square miles were so treated, and, in view of the staff employed, this cannot be considered to be a very satisfactory result. So far as the work yet done affords a basis for drawing any conclusion as to the capabilities of the forests, Mr. MacGregor thinks that the area is greatly underworked, and increased exploitation might with advantage be carried out. His Excellency in Council, however, considers that this opinion is somewhat premature and desires that the calculation of the forest stock may be vigorously pushed forward. In Sind, about 26 square miles of forest were surveyed, while the work of dividing the forests into compartments is reported to be approaching completion.

13. The number of prosecutions for forest offences was as shown in the following table :—

Circle.	1887-88.		1888-89.		Percentage of failures.	
	Prosecutions.	Acquittals.	Prosecutions.	Acquittals.	1887-88.	1888-89.
Northern Circle ...	709	171	1,031	255	24·1	24·7
Southern Circle ...	108	33	129	31	31·	24·
Sind Circle ...	130	52	105	42	40·	40·
Total ...	947	256	1,265	328	27·03	25·92

The result is satisfactory, except in the Sind Circle, where the percentage of failures is considerably higher than in the other two Circles. Colonel McRae remarks that " the results compare favourably with those of last year, as regards proportion of convictions to the number of cases tried ", but, as will be seen from the above table, that proportion has remained unaltered.

The following figures represent the number of cases compounded under Section 67 of the Indian Forest Act and the amounts accepted by way of compensation for damage done or for value of property:—

Circle.	1887-88.		1888-89.	
	Cases.	Amount.	Cases.	Amount.
		Rs.		Rs.
Northern Circle	5,142	8,003	6,154	11,272
Southern Circle	652	1,462	·599	2,271
Sind Circle	1,447	4,341	1,493	4,316
Total ...	7,241	13,806	8,246	17,859

14. The area traversed by fire in the Northern Circle was 1,588 square miles or 18·7 of the total forest area. This is a large increase on the area burnt in the previous year, namely, 947 square miles, but one reason, no doubt, was the unfavourable character of the season owing to the late setting in of the rains. The increase occurred almost entirely in the West Khándesh and Surat Divisions (the Dángs). The portion of the latter forest burnt in the previous year is now stated to have been incorrectly reported. The Conservator, Southern Circle, confines himself to "fire-protected" areas, and does not give the figures of total area burnt, on the ground, it is presumed, that the figures submitted to him by his subordinates are unreliable; but it is the duty of the Conservator to insist on correct returns, and in this connection the system inaugurated by Mr. Shuttleworth in the Northern Circle, as detailed in paragraph 111 of his report of the previous year, might well command Mr. MacGregor's attention. The budget estimate under the head "Protection from fire" was reduced in the Southern Circle from Rs. 15,560 to Rs. 11,000. The Conservator states that this reduction, of which he received intimation on the 2nd January 1889, necessitated his stopping all further fire-protection until he learnt what works had been already carried out, that fresh allotments to Divisions had then to be made, and fresh schemes prepared by the Divisional officers, and before all this could be accomplished, the fires had begun. In the end, the expenditure on fire-protection amounted to Rs. 3,514-2-10 only, or less than one-third of the sanctioned budget allotment. His Excellency in Council does not consider this satisfactory. All that the Conservator was required to do, on receiving intimation of the reduction referred to, was to make proportionate reductions in the provisional allotments to the several Divisions, and this slight modification might easily have been carried out without bringing the work of "fire-protection" to a dead stop. In Resolution No. 1942, dated 24th March 1888, Government sanctioned the general rule (except in the Panch Mahâls) that where the Collector is satisfied that there has been co-operation, connivance or gross negligence, or indifference, on the part of the village population as a whole, free-grazing be stopped in Government forests for one year when more than one-third of the forest is burnt, and for two years when more than half is burned. The Governor in Council must first be satisfied that the present measures for stopping fires have been fully tried and found to be inadequate, before he can entertain proposals for severer orders.

15 The remarks made by Mr. Shuttleworth regarding privileges conceded to villagers being, for the most part, a criticism of orders passed by Government after full consideration of objections urged by him, are out of place and should not have been made. His statement (paragraph 43) that the Kâlol forests "remain protected" is incorrect: these forests are, and always have been, reserved.

16. The reports now reviewed are valuable and interesting and have been perused with much interest by His Excellency in Council. The administration of the forests of the State is fraught with many difficulties, and these the Conservators have sedulously striven to overcome. They deserve the thanks of Govern-

ment for their year's work. In particular, Mr. Shuttleworth's untiring zeal and his thorough grasp of the administration of his charge are fully appreciated. Government observe with pleasure the commendatory remarks made by the Conservators on the officers serving under them, and to which they are justly entitled.

J. DEC. ATKINS,
Acting Under Secretary to Government.

To

The Conservator of Forests, N. C.,
The Conservator of Forests, S. C.,
The Conservator of Forests, Sind Circle,
The Commissioner in Sind,
The Commissioner, N. D.,
The Commissioner, C. D.,
The Commissioner, S. D.,
The Survey and Settlement Commissioner,
The Director of Land Records and Agriculture,
All Collectors, including the Collectors and Deputy Commissioners in Sind.
The Accountant General,
The Editors' Tables,
The Government of India, } (by letter).
The Secretary of State, }

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